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THE CULTIVATOR

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MR. HORSFORD'S LETTERS.—NO. XIII.

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Giessen, May 1, 1846.

MR. TUCKER—I am quite satisfied of two advantages possessed by the wine-growing countries of Europe over the lands of our northern states, in relation to the culture of the grape.

One is, the great surplus of labor here permitting an amount of care and cultivation, which, with existing wine prices, could not be afforded by agriculturists in general in our country.

Another is palpable from the fact that the first frost in this region of country occurred on the 15th of October. The weather of the summer season is remarkably uniform—not surpassingly fine, nor yet of the worst kind—but free from sudden and extreme changes.

Of the first reason; In Nov., 1844, I saw peasants carrying hods of earth up the steeps of the Rhine vintage to manure the soil about the roots of the vines. The amount of this labor, when it is remembered that square miles by the thousand are to be enriched in this way, and that each root is not more than a foot and a half perhaps in either direction from its fellow, is immense. Early in April of last year, I saw them at work removing the leaves and rubbish, tieing the vines to the stakes, and preparing them to take advantage of the genial influences of spring. Through the whole summer season, every walk past vintages, found some kind of labor going forward. In September the outer branches were cropped, to throw the flood of sap into the fruit. In October and November, the grapes were gathered, juice expressed, and disposed in casks for fermentation.

The labor bestowed upon this single department of agriculture has vastly exceeded all I had conceived.

Of the second reason; notwithstanding the long postponement of frost, it is computed that but one year in five can be calculated upon as fruitful. If with this uncertainty, one chance in five, the peasantry, accustomed to the simplest fare, can barely live, how could the effort to cultivate extensively be profitable with us, where the chances of success are so reduced by the contingencies of sunshine and rain, and where labor is so expensive?

How the effort may be rewarded in the states farther south, I am unable to say. Perhaps upon the eastern and southern slopes of hills in some parts of Virginia, the climate would not be objectionable.

Respectfully yours,

E. N. HORSFORD.

CONNECTION OF CHEMISTRY WITH AGRICULTURE

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MR. TUCKER—I have been greatly pleased by the perusal of a lecture, which I find in a foreign periodical, delivered by J. C. NESBIT, Esq., before the Agricultural and Scientific Training School, at Lambeth, near London. The subject of the lecture was OXYGEN, its properties, &c.; and so clearly and happily was it illustrated, that I have transcribed the following extracts, and am induced to offer them to you for insertion in the Cultivator, hoping that some of your readers may find their perusal equally as interesting as they have been to me.

J. C. S.

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Oxygen is found in the greatest abundance through the whole of this planet. It it is found in the air, in the water, in the clouds, in the earth, and in minerals of every variety. It forms a considerable portion of all sand-stones, and clays, and oxides (or rusts) of iron. The fact is, all the oxides or rusts are merely combinations of this substance with different bases or metals; and its very presence in such quantities throughout all nature, will sufficiently show the importance of its action. The affinities of oxygen for other bodies are more powerful, perhaps, than those of any element we know; of its action we shall have occasion to speak as we proceed.

The air contains one-fifth of its bulk of oxygen, which in that case, assumes the character of a gas; every five bushels of common air contain one bushel of oxygen. Oxygen, as a gas, is carried round the world, and penetrates every part; and the substances which require it are always sure to find something from which they can abstract it. Water, which is the next universally extended medium, contains a large quantity of oxygen; every nine tons of water contain eight tons of oxygen—not as a gas, but as a liquid; and in this way it is also disseminated over the world. In the generality of earthy matters, from one-third to one-half is composed of oxygen,

Oxygen gas is also given out in nature, from the decomposition of some of its combinations. The vegetable world is the great source of oxygen. Vegetables possess the power of decomposing two compounds of oxygen, *carbonic acid* and *water*, and of retaining the carbon of the one, and the hydrogen of the other, to form their own tissues. This operation, however, only goes on in the light of the sun, or in the effulgence of day. The process is this: Plants have roots and leaves. By the roots they take up moisture from the soil, and in this moisture are dissolved those substances which plants require for their subsistence. To form the organized parts of plants, however, it is necessary to have the assistance of the leaves, through the vessels of which the juices of plants must always pass, before they

become converted into the substance of the plant. The leaves of plants have a peculiar function, namely, that of separating the carbonic acid from the other constituents of the atmosphere, of retaining the carbon of this carbonic acid, and setting its other ingredient, the oxygen, free. After the sap has thus been mixed in the leaves, with the carbon which the leaves derive from the atmosphere, it goes to increase the growth of the plant. The water taken up by the root undergoes a somewhat similar decomposition, its hydrogen being retained and its oxygen liberated.

In some of the products of plants, such as turpentine, all the oxygen of the water and carbonic acid have been liberated.

Oxygen is chiefly remarkable as a most powerful supporter of combustion; it is the substance which in natural operations, consumes and burns up all vegetable and animal matter. It is this oxygen which, by its action upon the carbon and hydrogen of our wood, coal, oil, &c., produces that light and heat which we feel to be so necessary. It is oxygen which causes this candle to burn at the present moment; if deprived of oxygen it would be extinguished; but if the supply be augmented its brilliancy will be much increased. I will immerse the lighted candle in this jar of oxygen. In a moment you see the flame becomes brilliant, and burns with so much splendor as to dazzle the eyes.

A similar increase in the intensity of the action is seen, when other combustible substances, such as sulphur and phosphorus, previously ignited in the air, are brought into contact with pure oxygen gas.

Iron, zinc, and other metals will burn in oxygen with great ease, as I shall have occasion to show you towards the close of the lecture. It will not be difficult for you to understand why chemical action or combustion should be so much more intense in pure oxygen than in air. In the pure oxygen there is nothing to prevent the intimate contact of the two bodies which are uniting with one another, that is, the burning body and the oxygen; and as fast as one portion of oxygen has acted on the combustible body, its place is supplied by another portion, which in its turn will be wholly expended on the burning body. In common air this is different. Before the combustible body can be acted upon by one cubic inch of oxygen, five cubic inches of the atmosphere must be presented to it, which of course will take up five times the time. But the four cubic inches of nitrogen have also the effect of cooling the burning body in passing through the flame with the oxygen. The amount of light and heat produced depends on the quantity of chemical action which takes place in a given time. It is quite evident that the greatest action in the least time will take place with the pure materials. If we, by any artificial means, can contrive to make common air pass in large quantities through the interstices of combustible bodies, as charcoal, coal, &c., previously in a state of ignition, we shall in a measure increase the action as if we employed pure oxygen, because we shall cause a greater action in a given period of time.

It must now be apparent to all of you that the more oxygen we can get through a common fire place, or the more that can be brought in contact with the fuel in a given time, the greater will be the combustion, and the greater the heat. In the open air coals burn dull, and do not give out much heat or light in a given time. If coals be put in a fire place, more air gets through them in a given time, and a great heat will be produced; but then the coals will burn sooner. If you want to get more heat you must enclose the coals in a furnace connected with a high chimney, so that all the air is obliged to pass into the furnace through the bars at the bottom. You will thus have in the chimney a column of hot air, which is lighter than cold air. The cold heavy air will therefore force upwards the light air of the chimney and endeavor to supply its place; and as the air can only get into the chimney by passing through the furnace, a large quantity of oxygen is in this way supplied to the fuel in a short time. But though you get more heat in a given time, you consume more coals. I will give you another instance: The common blacksmith's forge, where, I have no doubt, you have often seen the workmen blow the bellows till they were almost tired. The object is to send a greater amount of air, (that is to say, to send more oxygen) among the coals, and by this means to produce a greater amount of heat in a given time; but in proportion to the rapid production of this heat will be the quantity of coals consumed. Now there is one fact in connection with this which you will do well to note. A pound of charcoal, in uniting with oxygen, gives out always the same *amount* of heat whether burnt quickly or slowly; and the same may be said of hydrogen and other combustibles; and whether the union be quick or slow, or whether a given amount of fuel be consumed in five minutes or five hours, the sum total of heat evolved will be the same. But it is evident that if the fuel be wholly consumed in five minutes, the heat in this case will be very intense during its short continuance; but if it last five hours, the heat will not be intense, but low and continuous.

Now, wherever oxygen is absorbed, that is, when it comes into union with another substance, heat is given out. I will give you an instance where common vegetable matter will ignite spontaneously, merely from the fact of its being brought in contact and union with oxygen. If we take a pound or two of cotton, and mix it with linseed oil or olive oil, (the best is boiled linseed oil,) and then lay it in a corner, the mixture will be on fire in twenty-four hours. The cotton exposes a great surface of the oil to the action of the oxygen of the air; and is at the same time from its porous nature, a bad conductor of heat. Very well; the oxygen and oil begin to act on one another; a little of the carbon and hydrogen of the oil is slowly consumed, and a small quantity of heat is generated, which slightly raises the temperature of the whole mass; for the non-conducting nature of the cotton will not allow the heat to escape as it is produced. More oxygen acts on the oil, more heat is given out, and this goes on till the whole gets to a red heat; light is evolved, and the mass is set fire to.

In the north of England, where a deal of oil is used in machinery, and where it is cleaned by waste cotton, many mills were at one time burned down from the cause I have mentioned. The dirty oiled cotton waste was thrown into a corner on Saturday night, and the mill was burned down before Monday; and it was frequently believed to be the work of an incendiary. Persons have been blamed for the crime; while the real cause was that which I am now telling you. The manufacturers are now more cautious, and take care not to allow the oily waste cotton to accumulate.

Agriculturists are liable to accidents of a similar kind. How much money has been lost from the storing of hay in a wet state instead of in a dry! Wet operates like oil; it enables the oxygen to get hold of the woody matter of the hay upon which it does not act in the dry. The hay is stacked in a great hurry, without being properly dried. Being damp and porous, the oxygen is absorbed, and a little heat given out, which cannot readily escape; a little more oxygen is absorbed, and a little more heat given out, till a red heat is attained, and then fire breaks out. Now the difference between the oil and the cotton, and the damp hay is only this; that in the first case the fire breaks out in a few hours, (from twelve to twenty-four will be sufficient,) while in the stack four or five days or weeks may sometimes be required.

I can show you another case. When farmers want to make manure, they heap up great masses of straw, litter, and excrements; and what takes place? It begins to smoke and gets heated. And where does the heat come from; how is it generated? The mass decreases in bulk very much; in eight or ten months it will have diminished at least half. But what is the cause? Don't you see this? The active and energetic oxygen is at work. You have vegetable matter moistened with water, you have oxygen absorbed, and it consumes the dung; but more slowly than in the case of the hay. I told you that hay may take fire in four or five weeks;

but good farmers so manage it that the heat shall not exceed from 80 to 90 degrees. The farmer also wants his dung to decompose mildly and quietly. But what would take place, if, instead of keeping the dung pressed down, he was to separate it, and let the air come in? Practical men will tell you that the heat would be largely increased; instances, indeed have been known of such heaps taking fire. In fact, if these dung-heaps are not properly attended to, they will readily take fire. You see, from this, that oxygen has a deal to do with manure; for it is by this substance that the farmer gets his heaps diminished in bulk. He gets the most worthless portion taken away; that which is left is more easily carted and more valuable. You see, therefore, what an active agent oxygen is. It acts, too, upon all metals exposed to the air. If you take a knife or a spade, and expose it to the action of the air all night, you will find it next morning of a red color. And what is this red substance? It is a compound of oxygen and iron, called the oxide of iron.

There are many other combinations which spontaneously take fire and give out heat from the absorption of oxygen. Iron pyrites, a compound of sulphur and iron, is found in large quantities throughout the globe. It is very bright and metallic, looking something like gold When exposed to air and *moisture*, oxygen is absorbed, which, uniting with the sulphur, forms sulphuric acid, and with the iron, oxide of iron. These two again unite, and form the sulphate of iron, or common green vitriol. As oxygen is absorbed by the pyrites, you are also sure that heat is produced. In the manufacturing districts, where sulphate of iron is largely made from pyrites, care is taken not to allow it to get over-heated: and if it should get too hot, water is thrown upon it. Bishop Watson, the celebrated chemist, tells a curious thing in his chemical essays. A man at Elland, in Yorkshire, collected a quantity of the pyrites, under the idea that it was gold, and put it into his barn in a heap. The barn, as was common enough in those days, was made of wood, and moreover the roof was a little leaky, and by this means rain was introduced. This generated a heat, and in the course of a few weeks, the heap took fire, and burned down the barn. You see, therefore, how important it is that such things should be borne in mind.

There is another thing very closely related to what I have mentioned. Any of you who have been in the north of England, must have seen all round the great coal-pits of Newcastle, Durham, and other places, large heaps of small coals, covering many acres. These coals have been deposited there owing to their small value; and you will find that they are always on fire. Perhaps you will imagine that the coals were set on fire? No such thing; they took fire by themselves. When I state to you that the coal contains sulphuret of iron (iron pyrites,) you will be at no loss to ascertain the cause. The action of oxgen on the sulphuret of iron is such as to produce heat, and the continued action of this heat causes the coal to take fire. Many singular phenomena of which we occasionally hear, as, for instance, smoking and burning cliffs, near the sea, are due to the action of oxygen on recently exposed iron pyrites.

But more still. This oxygen, this universally-acting busybody, has something to do with volcanoes and earthquakes. We find that these volcanoes burst out with tremendous force in some places, emitting large bodies of fire. Whence does this arise? This fire is doubtless the product of combustion. And what an enormous power must be generated to produce such awful results as the overthrowing of Herculaneum and Pompeii, the awful visitation of Calabria, or the destruction of the city of Lisbon.

In connection with Volcanoes it should be borne in mind that they are always near the sea. You know that when you look for their positions on the map, you keep your eye to the coast. Etna, Hecla, Vesuvius, Stromboli, the burning mountains of the Andes, and the volcanoes in the East Indies, are all to be found near the coast. There can be no doubt that water has something to do with them; and water, recollect, contains a great deal of oxygen.

It has been supposed that the matter of the interior of the globe consists chiefly of the metallic bases of the earths; and these, it is well known, have the power to decompose water, uniting with its oxygen and liberating the hydrogen.

Now, if by any means the ocean water penetrates to these metallic bodies, most intense action will be the result; heat will be liberated, and effects produced quite sufficient to account for the phenomena of volcanoes and earthquakes.

There are a few other points which I wish to bring before you. This oxygen is the agent appointed for the destruction of all vegetable and animal substances. Every one of us is undergoing its action. We breathe it, but we return less of it to the air than we took from it. What we inhale produces heat, and this is the reason why your bodies are warmer than the stone walls around you. Without any very great stretch of the imagination, or any very forced comparison, your bodies may be likened to little steam-engines, or blacksmith's fires. Your lungs operate as a pair of bellows, your mouth is the chimney, and the food is the coal. Your bellows are always going; if you are prevented from breathing for two minutes you will die. Yet, if it were not for the action of the oxygen on your body, you could not live; for from its continual consumption of the muscles of the body, you derive your physical energy and power. If you did not eat what would be the consequence? Would the bellows cease to work? No; they would go on working till every particle of available fuel, (flesh, fat, &c.,) was consumed. This shows that if you take no food to supply the waste of the muscles, you must, like a fire, ultimately *go out*. If food be withheld the parts of your body, such as the fat, the muscles of the cheeks, of the breast, and all other available parts, would be consumed by the action of the inspired air, before the bellows would cease to work; and, lastly, the brain would be attacked, and you would die. Now, this always takes place when, by any means, food is not taken, or not properly digested. On the other hand, if the blacksmith overloads his fire, and does not blow his bellows enough, the flame goes out; and you, if you are always eating and never blowing your bellows enough, you are still liable to *go out*. You are putting on too many coals, and that is the reason why I recommend you to enjoy yourselves at play, without which you can never expect to grow strong. Our life, and the life of all animals, therefore, depend on the action of oxygen and the supply of food. When these two are in a state of equilibrium or balance, we are in a state of *health*. When either one or the other are in excess, our normal state of health ceases, and various maladies ensue, which continue until the cause is removed. Eventually, however, the oxygen obtains the mastery, and these bodies of ours, like those of our ancestors, will be overcome by this powerful agent, and their elements will be returned into the great laboratory of nature, to furnish the principles of life and existence to succeeding generations of animated beings.

All vegetable matters undergo a similar change, and they also are eventually decomposed, to furnish again the elements of vegetable life.

All animal and vegetable substances, therefore, unless preserved in some peculiar manner, are resolved into their original elements. But if protected from the action of oxygen, they may be preserved for an indefinite period of time. Wood is painted to preserve it from contact with the oxygen of the air, and it thus lasts much longer. Again, coal is the remains of immense forests of primeval periods, and it has not yet been decomposed into its elements. These immense deposits of vegetable matter were, when deposited, covered with soft mud, so that the oxygen was prevented from coming in contact with them, and by the constantly increasing pressure from superincumbent deposits, the mud became a rock, and the action of the oxygen became less and less for each succeeding year. The con

sequence is, the mass has been preserved for an immense period of time.

Animal matter may also be easily preserved out of contact with air. The finest salmon of Scotland, the most excellent soups, game, fowls, and fish of all kinds, are now packed in air-tight tin cases, and can thus be sent to all parts of the world. The travellers across the desert of Suez, in their journey to the East Indies, often enjoy the luxury of *fresh* Scotch salmon.

Oxygen, then, is one of the most important elements that we know; everything else yields to it in importance; it is found to pervade all nature; it is necessary for the existence of animal life, and is an essential of vegetable growth; and in order that you may be able to trace its effects for practical purposes, in the economy of the farm, I have endeavored to explain its properties and action, not only on vegetables and animals, but also on many elementary bodies not directly connected with vegetation.

CHEESE-MAKING.

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AT the present time, it is an object of considerable consequence to the manufacturers of cheese in this country, to produce that which would be approved and meet with a ready sale in the English markets, whither a large quantity of that article is now being sent. One of the most esteemed varieties of English cheese, is that made in Cheshire; and, having had frequent inquiries in regard to the process of manufacturing this kind, from those who are desirous of imitating it, we give from the Journal of the Royal Agricultural Society, a brief sketch of a prize essay, by Mr. WHITE, on Cheese-Making in Cheshire.

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The number of cows belonging to a cheese-dairy, is stated to be seldom less than 8 or 10, or more than 70 or 80. From 18 cows, a cheese from 36 to 54 lbs. weight, is made daily for four or five months in the summer. The annual produce, however, varies with the cows and mode of keeping, and it is observed that *great loss is known to have been sustained by not feeding the animals well in winter.*

The milking is performed in cow-houses all the year, and it is usual to have a milker to every six or seven cows. The milk of newly calved cows is not mixed with that of other cows till four or five days after calving.

The evening's milk is seldom made into cheese till the following morning, and in small dairies, sometimes not till the second morning. A cool milk-house is necessary, and hence it is commonly placed on the side of the house (or other building) least exposed to the sun. Most milk-rooms have lattice or wire-windows for the circulation of air, and an inclination is given to the floors for the free escape of the cold water which is daily applied to them in summer. Precautions of this kind are necessary to prevent the milk from becoming sour. A temperature of fifty degrees Fahrenheit is thought the best throughout the year.

The dairy is generally near the milk-house, and fitted with two boilers; one for scalding whey, and another of less size for heating water. The salting and drying house should adjoin the dairy. Here the cheeses are placed on stone or wooden benches, salted externally, and dried, before removal to the cheese room. Some dairy-maids dispense with external salting. Sometimes the cheese-room is over the dairy, and at others it is over the kitchen, or other apartment in which a fire is kept. Light and air are always excluded from it by curtains or shutters; and one reason assigned for the practice, is its tendency to prevent the hurtful effects of the fly. Some of the larger cheese-rooms are warmed by stoves or hot-air, and in rare instances, from ordinary fire-places built in them.

PROCESS OF CHEESE-MAKING.—The extraction of the whey, and salting, occupy from five to seven hours, and it is therefore convenient to commence working in the morning. In this case, the evening's milk is kept over night, and in the morning the cream is skimmed off, and a portion of the milk warmed. The warming is effected by means of a brass or tin pan, about twenty inches in diameter, and eight inches deep, in which the milk is floated in the boiler, the water in which has been heated for the purpose. In the early months of the season, so much as half the evening's milk may be heated to a temperature of 100 degrees, a heat seldom exceeded, except with a view of saving trouble in the after process. The cold milk is now poured into the cheese-tub, and the warm added to it. The temperature of the mixture may be about 75 degrees, but in warm weather 70 will be enough. It is, however, becoming the general practice, in summer, not to warm the evening's milk; and in very warm weather, even the temperature of the morning's milk is sometimes reduced. The cream, diluted in about double its quantity of warm or new milk, is next put in. If a small portion of the cream is to be retained for butter, it is thought best to skim it off the whole surface of the cream before diluting, in order to remove froth and bubbles, which are considered prejudicial to the cheese. This leads to the conclusion, that fixed air in the curd is detrimental, and suggests the inquiry whether it might not be better to heat the whole of the evening's milk to the required temperature, than to raise the temperature of a part of it to 100 degrees. The next step is to add the new or morning's milk, which is done by passing it through a seive placed on the cheese-ladder over the cheese-tub. Bubbles seen floating on the surface are skimmed off, and passed through the seive to break them.

An important point now demanding attention, is the proper temperature of the milk when the rennet is put in. Little is known among farmers and dairy-maids as to the precise heat which is best; and it is seldom that the temperature is tested otherwise than by hand. In some dairies in which observations were made, the lowest heat was 77 degrees. Even where what is called cold-cheese, which has a tendency to green-mould, is made, it is not supposed that a temperature is adopted at any season of the year, much under 74° or 75°. The evening's milk being about 75, and the morning's milk from 90 to 95 degrees, the temperature of the whole is found to be from 80 to 85 degrees. The exact heat at which milk ought to be coagulated is a matter of essential importance in cheese-making, and it can only be ascertained by a series of careful and judicious experiments, made by scientific and practical parties.

The rennet or steep is now to be added.* To fix the quantity necessary for coagulating a given quantity of milk is difficult, as maw-skins vary much in quality. In using them two skins are often cut at once. Three square inches taken from the bottom, or strongest part of the one, and one or two inches from the top or weakest part of the other, are generally sufficient for sixty gallons of milk. These pieces are put into a cup containing about half a pint of luke-warm water, with a teaspoonful of salt, the day before the infusion is required. The water thus impregnated with the maw-skin is passed through a seive into the milk; but the skin itself is usually kept out; the rennet cup is well scalded before being used again. The coloring matter and rennet having been put in, the milk is well stirred and left to coagulate, and the tub is covered up. [It is remarked in a note, that the coloring matter used is Annatto, which gives the cheese an amber or cream-like appearance. It is said to be seldom used when the cheese is intended for the consumption of Cheshire families, as it is known not only that it does not improve the flavor, but that if the quality of the drug, is inferior, or, if there is too much of it used, there is a hazard of the flavor being much deteriorated. One pound of it to a

* The following is given as a good recipe for curing maw-skins. Procure fresh skins the year before they are wanted; free them from chyle and every impurity; turn them inside out and salt them; lay them one upon another, with salt between, in a deep earthenware vessel; cover the whole over with salt, and lay a lid on the top. About a month before using them, take them out and drain the brine from them; then spread them on a table, and powder them on each side with fine salt. In this state they are to be rolled with a paste roller, distended with splints of wood, and hung up to dry.

ton of cheese, or half an ounce to seventy-five pounds, is considered a moderate proportion. The coagulation is commonly effected in an hour or an hour and a half. The warmer the milk, or the stronger the rennet, the sooner coagulation ensues; but the curd is tougher and less in quantity; on the contrary, the cooler the milk, or weaker the rennet, the longer the curd is in forming, but it is both more tender and there is more of it. Too much rennet tends to impart an unpleasant flavor or bitterness to the cheese.

It may generally be expected that the heat of the curd when formed, will be four or five degrees less than the milk was when the rennet was applied; and the difference, especially in cool weather, should not be greater. To determine when the curd is fit for breaking, requires some practical knowledge. It is usually done by gently pressing the surface of the milk with the back of the hand, or by lifting up the skimming dish, beneath which the curd and whey will distinctly appear, if the coagulation is complete. Another criterion is the color of the whey, which should be pale green.

The breaking and gathering of the curd next engage attention. These operations are performed by the hand and skimming dish, or more commonly the curd-breaker. This implement is made of wire-work, in an oval form, and has a rim of tin round it about an inch and a half broad. It cuts the curd by being passed through it perpendicularly, and at first very, *very* gently in different directions, so that the whole mass is separated into very small portions. For a 60 lb. cheese, this operation takes twenty or twenty-five minutes. The curd is then left for a quarter of an hour to separate from the whey, and if the weather is cool, a cover is put over the tub to retain the heat. After the separation of the curd, which falls to the bottom, a portion of the whey at the top is taken out by the portable brass or tin pan being pressed into it, and emptied into the set-pan; the curd is then gently broken, by being raised with the hands to the surface, or by the renewed use of the curd-breaker. When the curd is brought to the top, it is easily raised and separated into small portions for the release of the whey. This part of the process takes about half an hour. After about another half hour, or as soon as the curd is sufficiently settled, more whey is taken out, and the curd, so far as its contexture will admit, drawn into one-half of the bottom of the tub; a semicircular board is then placed on the curd, loaded with a weight of about 30 lbs. The board is perforated with holes about half an inch in diameter, for the escape of the whey. The tub is now set three or four inches atilt, to facilitate the discharge of the whey from the curd, and the skimming dish is used to lade it out. On its way to the set pan, the whey passes through a sieve in which any curd contained in it is collected. This curd is called slip-curd, and by some dairy-maids is not returned to the tub. The weight and board are shortly removed, and such part of the curd as has been squeezed from under them is again collected on one side, and heavier weight of 50 or 60 lbs. applied as before. As the whey is expelled from the curd it is removed. In a quarter of an hour the board is taken off again, the curd cut by intersections six or eight inches apart, and then the board replaced, doubly loaded. Sometimes the slip-curd is now added, the weight is again increased, if necessary; care being taken to augment the pressure gradually, and to regulate it by the degree of compactness of the curd; for if caution is not used in this respect, both now and afterwards, a considerable portion of butyraceous matter will be forced out to the detriment of the cheese.

The curd is again cut into square pieces, taken out of the cheese-tub, and broken a little by the hands as it is passed into the thrusting tub. Sometimes a large-sized cheese-vat, and at others a willow basket is substituted for the thrusting-tub. In this the further extraction of the whey is continued by the application of the screw, of which there are different kinds, but the principle is the same in all. Preference, however, seems due to the lever press, which possesses the advantage of sinking by its own weight, and of allowing the application gradually of any degree of pressure, with less attention on the part of the dairy-maid.

The proportion of salt is not regulated by any definite rule. One farmer, distinguished for improvements in agriculture, uses one pound to forty-two pounds of curd. In another instance, more salt is used in summer than at other times, the average being one pound for forty pounds of dried cheese, or about forty gallons of milk. In autumn there is always more curd in the milk than at other seasons; and in wet weather there is sometimes an increase of milk without a corresponding augmentation of curd. Before applying the salt, the curd is cut into three or four equal parts, and these are broken into smaller pieces by the hand or by the curd-mill. The salt is then strewed over it, and the breaking continued till the salt is well intermixed, and the curd completely crumbled.

The presses employed, for the two first days at least, and, if possible, during the whole process, should be within the influence of moderate heat; otherwise the the discharge of the whey will be retarded, and greater hazard incurred of the flavor of the cheese being injured by acidity, to which the whey is prone. On the second day after the cheese is put in the press, it is turned two or three times, and a clean cloth used each time of turning. On the third day the cheese is again turned once or twice. The heaviest press is now resorted to; and for a cheese of 60 or 70 lbs. weight, a pressure of 30 cwt. will be enough. On the fourth day it is usual to discontinue the pressure; but is sometimes continued a day or two longer.

Salting and Drying Room.—There are sometimes separate apartments for salting and drying, but gene rally one room answers for both purposes. The salt can now be applied externally only, and if any good is done by it, the effect must be in the hardening of the coat of the cheese.

It may be questioned whether it would not be a better plan to remove the cheese direct from the press to the cheese-room. The practice of external salting, however, is commonly observed. The cheese is taken out of the vat, and a strong bandage about two inches broad, and long enough to go three times round the cheese, is put upon it with salt underneath. It is fastened with strong pins; the cheese is placed on a stone or wooden shelf or bench, and salt spread on the top to within an inch or two of the edge. The cheese is turned daily, and fresh salt and a clean bandage are as often applied. Some persons continue this salting five or six days, others three weeks. The salting being completed, the cheese is well wiped or washed, a fresh bandage is put round it, and it is laid on a wooden shelf in the same room or an adjoining one, for the purpose of being dried. It is turned once a day, and when considered sufficiently dry it is removed to the cheese-room. The time for drying the cheese in the drying-room varies from seven to twenty days, and depends on the temperature of the weather, or of the cheese-room, to which it is next to be taken. In hot weather, and particularly if the cheese-room is exposed to the heat of the mid-day sun, the change from a too cold drying house is apt to cause cracks in the cheese. If these are left open, mites are soon generated, and the appearance of the cheese is hurt. In consequence, whey butter is sometimes used to fill them up. To prevent cracking, the windows of the drying and salting rooms are rarely if ever opened. The same is the case in the cheese-room, from which, in addition, the light is excluded. The heat of drying-rooms, it is thought, should range from 50 to 60 degrees.

When a cheese is taken to the cheese-room, it is usual to scrape and clean its exterior, and to place it, at first, in the coolest part of the floor, and finally upon the warmest part. The bandage is continued for several weeks, and sometimes until the cheese is sold. The cheese is turned and wiped daily for three or four months, at least, and afterwards every alternate day. The floor of the cheese-room is generally covered with dried rushes or wheat straw. It should be level, and

well washed with hot water and soft soap twice or thrice a year. The temperature should be from 60 to 65 degrees.

It is added in conclusion, that the industry, cleanliness, and frugality of the Cheshire dairy-maids, are worthy of admiration. Though their labors are great, their cleanliness cannot be surpassed; and it is often to their good management that landlords are indebted for the payment of their rents.

PROPERTIES OF WOOL.

.....

YOLK—NATURAL OIL, &C.—The quantity of these substances in wool varies greatly with the breeds of sheep, and various circumstances attending their management. For instance, in the English long-wooled breeds, as the Liecester, Cotswold, Lincolnshire, &c., there is very little of what is called yolk, and, therefore, the washing of the sheep in the ordinary manner, is sufficient, with proper attention, to thoroughly cleanse the wool. Hence, in fleeces of this description, there is a greater quantity of real wool in proportion to the whole weight, than there usually is in fleeces from sheep of the Spanish or Merino varieties. Some of the latter, as is well-known, possess the habit of accumulating yolk or gum in the fleece to a remarkable degree; fleeces being occasionally met with, which, even after having been washed in cold water on the back of the sheep, are lessened in weight to the amount of fifty per cent. more, in passing through the further process of cleansing to which the manufacturer subjects them before they are wrought into fabrics.

Wool-growers appear to entertain different opinions in regard to the effect which yolk has on the value of the fleece. Some seem to suppose that the aggregate amount which they receive for their wool is increased from the greater weight which it possesses by being charged with this substance; but the sagacious manufacturer will of course regulate his prices according to the condition of the article he buys, not caring to pay for substances which are worthless to his goods. Others, again, endeavor to breed their sheep with as little yolk and animal oil as possible, acting on the supposition that these substances deteriorate the quality of the fleece, without being of any advantage.

Having had several inquiries in relation to this subject, the importance of which requires that it should be understood, we addressed a note to L. A. MORRELL, Esq., well known as the author of the "American Shepherd," and from his reply we make the followiug extract:

"If you will refer to the American Shepherd, (page 30,) under the head of "*Yolk*," I think your questions will be nearly all satisfactorily answered. You will there note, that the *natural oil* of wool combines with the yolk, yet there is not a *chemical union;* hence the yolk or gum can be separated by *thorough washing* on the sheep's back, but the oil remains, at least to a considerable extent. This substance [yolk] is glutinous in its character, which causes dirt to adhere with such tenacity to the external part of the fleece, that only the manufacturer's process of cleansing will free it. By this, the oil, with everything impure, is eradicated; but if the dirt could be removed, and the oil remain, that it would supercede the use, in some slight measure, of grease, preparatory to carding, there is not a doubt. Of the benefit of oil to wool when growing, were we to question it, would be doubting the wise provisions of Providence for the benefit of the brute creation. All wool-growers of nice observation will testify, that in a fleece much imbued with oil, the fibres are stronger, and invariably soft in feeling; on the contrary, a deficiency of this substance is followed by a harshness and brittleness. Individuals of a flock will have much more of oil united with yolk than others, and generally speaking, in reference to the Merino and Saxon variety, they are the healthiest and best constitutioned sheep. Still I have known exceptions to this.

"In conclusion, I consider oil of vast importance in perfecting the fibre. Manufacturers have no objections to it, further than it increases the weight of the fleece; but this will rarely apply to Saxon wool, if the sheep are not permitted to run too long after washing before being shorn; not so, however, in reference generally to Merinos. They have it in such profusion that the dirt collects in enormous quantity on the external part of the fleece, forming an indurated crust, which, when scoured, reduces the weight of the fleece nearly one-half. But free it of its impurity, and no wool works more kind-kindly than the Merino, or is softer 'in handle' after its manufacture. I state this on the authority of a manufacturer. Set it down as a 'fixed fact,' that manufacturers have no objections to gum; but they have very strong objections to paying as much for it as wool, or, indeed, anything at all. They value it as a concomitant of a strong fibre, and therefore less wastage in the process of manufacture."

In addition to the above, we extract from the American Shepherd the following, being a portion of the chapter to which Mr. M.'s letter refers:

"This peculiar substance, [yolk,] is so called abroad, from its adhesiveness and color; but with us it is termed *gum*, an appellation derived from its glutinous properties, quite as appropriate. It is apparent in the fleeces of fine-wool sheep, especially the Merino, at all seasons of the year, but very much so in the winter and spring; and although diffused through the whole fleece, yet such is its profusion in the Merino, that it is observable in detached concrete particles, resembling ear wax. According to the chemical analysis of Vauquelin, it consists principally of a soapy matter, with a *basis* of *potash;* a small quantity of *carbonate of potash;* a small quantity of *acetate of potash; lime in an unknown state of combination;* and an atom of *muriate of potash*. Its peculiar color, well known to those familiar with the fleeces of Saxon and Merino, is derived from the infusion of a small quantity of *animal oil*, and is in every respect a true soap, which would permit of the fleece being thoroughly cleansed by the ordinary mode of washing, were it not for the existence of this uncombined fatty or oily matter, which remains attached to the wool, and rendering it glutinous, until subjected to the process of scouring by the manufacturer.

"There are some, from ignorance, who imagine the *yolk* or *gum* to be, if not absolutely a detriment to wool, at least a useless concomitant. This, however, is a decided mistake. It is a peculiar secretion from the glands of the skin, acting as one of the agents in promoting the growth of the wool, and by its adhesiveness, matting it, thereby forming a defence from the inclemency of the weather. From accurate observation, it has been ascertained, that a deficiency of yolk will cause the fibre to be dry, harsh, and weak, and the whole fleece becomes thin and hairy; on the contrary, when there is a natural supply, the wool is soft, plentiful, and strong. The quantity is depending on equability of temperature, the health of the sheep, and the proportion of nutritive food it receives."

A deficiency in the natural supply of yolk, among some kinds of sheep in Britain, has induced the practice of smearing them with various mixtures of oil or grease. An example showing the advantages of this practice, said to have been recorded by the eminent breeder, BAKEWELL, is quoted by Mr. MORRELL, as follows:—

"An intelligent manufacturer in my neighborhood, who kept a small flock of good wooled sheep, informed me he had adopted the practice of rubbing his sheep with a mixture of butter and tar. He could speak decidedly to the improvement the wool had received by it, having superintended the whole process of the manufacture. The cloth was superior to what ungreased wool could have made, if equally fine; it was remarkably soft to the touch, and had a 'good hand and feel,' the appearance of the threads being nearly lost in a firm, even texture, covered with a soft, full nap."

Mr. MORRELL adds:—"The additional value then, the yolk imparts to the wool, affords a useful lesson to

the wool-grower, to take such care of his sheep as will best supply the needful quantity. Equability of temperature being one requisite, he should protect his flocks during the winter season; and good condition being another, wholesome and nutritious food should not be spared."

SOFTNESS OF WOOL.—Mr. MORRELL observes, [Am. Shepherd, p. 35,] that—"wool of the same quality of fineness has not the same degree of softness." This we have frequently observed. Samples which under the microscope show the same degree of fineness, sometimes appear quite different to the touch—the one being soft and *cottony*, and the other harsh and rigid. Mr. M. remarks "that it is not as generally known as it should be, that softness is a quality of wool of much consequence. When the wool-buyer and stapler proceed to an examination of a parcel, their judgment will be materially affected as to its value, whether 'soft in handle,' or otherwise.

Wool is thought to be considerably affected by the nature of the soil on which the sheep are grazed; thus in England the chalky districts, it is said, invariably produce harsh and brittle wool. Mr. MORRELL observes, however, that "the general cause of a deficiency of softness in wools of the same breed, may be referred directly to the *condition* of the sheep. It has already been stated," continues Mr. M., "that when the animal was kept in uniformly good condition, the necessary quantity of *yolk* was supplied. Now if there is but little of this substance, which will follow an abuse in management, the wool will be less pliable and 'kind to feel.' Therefore it may be set down as an universal rule, that wool owes much of its softness to the *presence* of a *sufficiency* of *yolk*."

Mr. M. quotes the following from an English author, YOUATT, as showing how highly the quality of softness is appreciated by the manufacturer. Mr. Youatt says—"it has been affirmed that two parcels of assorted wool being taken, possessing the same degree of fineness, but the one having the soft quality in an eminent degree, and the other being harsh, the cloth prepared from the first, at the same expense, will be worth more to the manufacturer than the other, by full 25 per cent."

THE FIBRE—HOW AFFECTED BY KEEPING.—The observation of most wool-growers may have taught them that sheep in very high condition do not produce as fine wool as the same animals do when less fat. The abundant juices of the skin in fat sheep, would naturally distend the fibre to an unusual degree. On the other hand, poor keep, or disease, by lessening the fluids from which the wool is formed, would tend to render it smaller or finer in fibre. It is, therefore, plain, from these two facts, that to produce a fleece, the staple of which should be of uniform character or fineness throughout its length, the food and all circumstances affecting the growth of the wool and the condition of the sheep, should be as nearly as possible the same at all times; as irregularity in food would obviously occasion a corresponding irregularity in the size and strength of the fibre.

It is true that the wool of poor and sickly sheep is generally finer than that from those of the same breed which are in good health and flesh; but though such fine wool may be highly valued by those unacquainted with its true character, the experienced manufacturer will readily detect its rottenness, and its want of elasticity and other qualities necessary to form useful fabrics.

It should, then, be the object of the grower of fine wool, to supply his sheep, both summer and winter, with food adapted to their natural habits, and in such quantity that, while it shall not deteriorate the quality of the wool by the accumulation of superfluous fat, shall secure that medium and uniform condition necessary to the production of a fleece yielding the most profitable returns both to the grower and manufacturer.

The importance of these remarks will perhaps appear more striking in connection with the following extract from Mr. YOUATT's description of the fibres of wool.

"The fibres of white wool, when cleansed from grease, are semi-transparent; their surface in some places is beautifully polished, in others curiously encrusted, and they reflect the rays of light in a very pleasing manner. When viewed by the aid of a powerful achromatic microscope, the central part of the fibre has a singularly glittering appearance. Very irregularly placed minuter filaments are sometimes seen branching from the main trunk like boughs from the principal stem. This exterior polish varies much in different wools, and in wools from the same breed of sheep at different times. When the animal is in good condition and the fleece healthy, the appearance of the fibre is really brilliant; but when the sheep has been half starved, the wool seems to have sympathized with the state of the constitution, and either a wan, pale light, or sometimes scarcely any, is reflected."—[*See Youatt's work on Sheep, in the Farmers' Series, p.* 65.]

FARMING IN WESTERN NEW-YORK.

MR. TUCKER—I was much gratified last week in viewing a few farms in the neighborhood of Rochester, more especially those of Mr. C. B. STEWART and WM. BUEL, Esq.

The soil is a black muck, which has the appearance of being all organized matter composed of decayed timber; if so, it must contain all the necessary food for plants without manuring. According to chemical analysis, the four elementary bodies, hydrogen, nitrogen, oxygen and carbon must be deposited there. Still this land is as grateful for manure as any land I ever saw. How are the professors of chemistry to account for this? I should like to hear from them. I should at once have said it was want of sufficient alkalies, or inorganized matter, had I not seen the effect of barnyard manure, which was only adding organized matter to it.*

Mr S. has eight acres of carrots; part of them were manured from his stables, and were a very promising crop. Another part (about half of them) with leached ashes, are the finest crop I ever saw. And a patch in the centre, exactly the same soil, was planted without any manure. This piece looked as if they would not pay the trouble and expense of sowing and weeding. They were all weeded by German women at three dollars per acre the first time, and a dollar and a half the second.

His plan of soiling is very economical; twenty-five acres are divided into five lots for that purpose:

First—sowed in the fall with rye, cut and fed in May; manured and plowed on the first of June, sown with corn broadcast, and seeded with clover. This piece of corn had a greater bulk of feed upon it than anything I ever witnessed. The corn is fed in August; and he assured me that the clover in October afforded him a tolerable cutting.

Second—Sowed early in May with oats and peas—the green peas sold in July, and the vines and green oats fed as fast as the peas are picked. This lot is manured and plowed by the middle of July, sowed with oats again and seeded with clover; the oats fed in September, and the clover used the next season for soiling.

Third—Seeded down to clover the year previous, and is cut in June, August and October, and at each cutting it receives a top-dressing of compost or plaster, and is plowed again in the fall, and sowed to rye for the next spring.

Fourth—Sowed with oats early in April, cut in June; plowed and sowed with oats again, which are fed in August and September; plowed and sowed with rye for the next season.

Fifth—Corn and pumpkins planted in drills early in May, and seeded with clover; the corn sold green in the market, the stalks fed in August, and the pumpkins in October; the clover either used for hay or soiling the next season.

* It is impossible to tell precisely what are the constituents of a soil, without particular examination. This land may contain all the *organic* constituents of plants, and yet it may lack the *inorganic*. The "four elementary bodies" named would be of themselves insufficient. The "barn-yard manure" probably contains principles which the "muck" does not; and its alkaline salts may tend to render the vegetable food of the muck more available. That alkalies are highly beneficial, is inferred from the effect produced by ashes on carrots, as is spoken of further on.—ED.

Mr. S. said he had kept sixty cows thus far, and had green feed for six horses, since the first of May; and he believes that twenty acres will carry them through the six months, when the land comes into a higher state of cultivation. He further says that this farm (sixty acres), when in the hands of a tenant in 1844, produced only one hundred and twenty dollars to be divided between landlord and tenant! He grows a quantity of broadcast corn, which is dried in small bundles, cut up in winter with his hay, and steamed with carrots, which practice he considers a very great saving. All the feed he purchases for winter, is about a peck of brewer's grains per day for each cow, or its equivalent in oilcake.

The Depot is well arranged: a passage sufficiently wide to drive a wagon between the cows' heads, with room enough to feed on either side. His office and steamer are on one side of the entrance, and a place for his wagons on the other, with his horse stable attached in range with the cows, so that all can be fed at the same time.

It is all admirably arranged, for which and for his new enterprise Mr. Stewart deserves great credit.

The farm of William Buell, Esq., is situated about a mile from Rochester. It received the second premium of the New-York State Agricultural Society in 1845. At the time he purchased it in 1844, it was in a most dilapidated state—large stones were strewed around in every direction; stumps, with their wide and extended roots, occupied much of the land; a considerable part consisted of swampy hollows, and it was almost destitute of fence.

His house is built on a hill in the centre of the farm, from which is a gradual slope on either side to the flat land below. He has now one hundred acres of wheat on the farm, and part of which is on some of these swamps which have been reclaimed by thorough draining. Judging from the straw, I should say that some of it would yield forty bushels to the acre. In a portion of his crop, the weevil had made ravages, and destroyed much of it. He was drawing the wheat to his barn, and threshing it with a machine of six horse power. This barn is built on a side-hill, and the straw is conveyed by an endless chain to an exceeding large stack, and requires two men to remove it from the machine as it it is threshed. This stack of straw denoted that my friend had done *something* for his soil. It was the largest I ever saw. The large piles of stones in every direction, ready to be conveyed in winter and placed in stone walls, prove that industry and the purse have been good friends. The compost heaps in the fallow fields denote the good husbandman. He had twenty acres of corn looking as finely as corn can possibly look, and other grain in proportion. The hospitality and good cheer in the house proved his valuable friendship. Comfort, happiness and plenty seem to reign around him, and his example will do much to all observers.

WM. H. SOTHAM.

NUTRITIVE PROPERTIES OF POTATOES.

AN article has lately been published in the *Irish Farmer's Journal*, in regard to the relative proportion of nutritive material contained in potatoes compared with that contained in wheat and other grain, which we think can hardly fail of commanding attention from those qualified to investigate and elucidate this subject. Considerable diversity of opinion, it is well known, has existed in regard to the comparative value of the potato. The results of most chemical analyses have been looked upon as indicating that this root possesses but very little nutriment; though we believe that this conclusion has not been so readily reconcilable with facts developed by practical observation. Certain it is, that a higher estimate is usually allowed to potatoes by those who form their opinions from actual trial, and the results produced on the animal system, than most chemical tests would justify. We do not say this as opposing science, for it is obvious that *real* science exhibits no discrepancy with practical facts; TRUTHS can never oppose each other, whatever may be the mode by which they are discovered. The attainment of truth is, however, the grand object, and in that view, we are gratified to meet with the article mentioned; which, if not wholly true itself, we think can hardly fail to elicit such an examination as will much enlighten the subject.

The article in the Journal relates chiefly to a statement and facts therewith connected, laid before the Lord Lieutenant of Ireland by Mr. JASPER W. ROGERS, of Dublin, a Civil Engineer, who, it is said, has for several years devoted considerable attention to the composition of the potato and its susceptibility of being applied to various uses. From the extracts which we give below, it will be seen that Mr. ROGERS deems the nutritive properties of the potato, when wholly converted into meal or flour, not essentially different from those of wheat, while the aggregate amount of substances proper for the support of animal life, afforded by a given quantity of land, are held to be *four times greater* than can be had from wheat.

At the request of the Lord Lieutenant and other gentlemen, Mr. ROGERS exhibited, at an appointed time, some of the results of his method of making the potato available as food in many different forms. This exhibition is stated to have been "in the form of an elegant *déjuné*, all the items of which, with the exception of coffee, were prepared more or less from the potato; when a most satisfactory account was afforded by Mr. Rogers, of the different processes of their preparation, with much interesting information relative to the value of the potato itself, which, he very justly observed, is too much overlooked. Every one present was astonished at the rich treat provided on the occasion, which consisted of soup, stirabout, milk porridge, jellies, blanc mange, Spanish flummery, and pastry of all kinds, made, as we have already stated, principally of the produce of the potato, either as meal, flour, or fecula.

"After the gentlemen present had partaken of the various preparations, Mr. Rogers observed, that the preparation of the meal and flour from potatoes was so simple that it could be accomplished in the cottage of the poorest peasant. He then described the component parts of each food upon the table. The general proportion being one-half potatoes; some, however,—viz., milk porridge, 'Scotch bread,' and rock biscuits—being entirely made from it; also the jellies, blanc-mange, &c., produced from the *pure fecula*, without animal matter of any kind—in fact, no addition but the usual seasonings. The soup, also, which appeared to be a palatable and nutritious food for the lower classes, was stated to be made of a small quantity of bacon, thickened with meal of the potato, and which was capable of being made in a short period of time, at a cost of about one farthing per pint.

"Mr. Rogers then alluded to the general impression as to the want of nutritive power in the potato, and deprecated the publication of statements which were founded in error, stating that there was 'little, if any, nutriment in the potato.' He contended that the nutritive properties of the meal and flour of potatoes were almost, if not entirely, equal to that of wheat; and then gave the following analyses of each, assuming the constituents for the support of animal life, contained in vegetables, to be starch, sugar, and gluten

When converted into meal, the potato contains—

Starch and sugar,	84.8
Gluten,	14.82
Oil,	1.10
	100.

While wheat converted into meal, contained—

Starch and Sugar,	78.20
Gluten,	17.53
Oil,	4.27
	100.

Thus showing that the difference between the gluten was but 2¾ per cent., while the starch and sugar were more abundant.

"The difference between '*meal and flour of potato*,' prepared as recommended, and 'farina,' was pointed

out. Farina is the starch of the potato, taken from the fibre, and contains nothing beyond the properties of starch—while the *fibre*, which is thrown away in the manufacture of farina, is rich in animal matter and oil, and by being combined with the farina, or fecula, produces a meal or flour, closely analagous to that of grain. This fact it was particularly necessary to bear in mind, in order to counteract the impression that there was but little nutriment in potatoes—a strange one, where so many millions lived on them as their only food.

A comparison was then entered into between the relative amount of food obtained from an acre of land, in wheat and potatoes. On this subject, Mr. Rogers stated that he did not rely on his own experience, but cited the authority of practical men as to produce, and of eminent scientific men as to the analysis of the respective crops, stating the following as the result of his inquiry:—

	Starch and Sugar.	*Gluten.*	*Oil.*
1 acre of wheat,.....	825 lbs.	185 lbs.	45 lbs.
1 acre of potatoes, ...	3427 lbs.	604 lbs.	45 lbs.

Thus it appears that potatoes will produce of meal and flour, FOUR TIMES, nearly, in weight, what can be had from wheat—a fact not generally known, but which could not be contradicted. He begged to impress this startling fact on the minds of those who heard him, and hoped to rescue the potato from the calumnies thrown upon it."

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The following table, calculated by Mr. SOLLY, chemist to the Royal Agricultural Society, shows the comparative amounts of nutriment afforded by certain crops, according to his analyses:

AVERAGE PRODUCE PER ACRE.	Water.	Unazotized Organic Matter.	Protein Compounds.*	Inorganic Matter.
	lbs.	lbs.	lbs.	lbs.
1. Turneps, 25 tons, or 56,000	51800.0	3309.6	442 4	448.0
2. Carrots, 15 tons, or 33,600	29433.6	3128.2	655 2	383.0
3. Parsneps, 12 tons, or 26,880	21542.7	4642 2	561.8	333.3
4. Potatoes, 8 tons, or 17,920	14228.5	3053.6	433.7	204 2
5. Barley, 35 bsh., or 1,800	237.0	1314.2	205 9	42.3
6. Oats, 40 bsh., or 1,700	238.0	1215.7	187.8	58.5
7. Peas, 25 bsh., or 1,600	137 6	1017.7	399 4	45.3
8. Beans, 27½ bu., or 1,750	138.2	979.0	581 2	51.6
9. Wheat, 28 bsh., or 1,980	243.6	1184 4	248 4	33.6
10. Cabbage, 10,000 plants, or 80,000	73840.0	4184.0	1456.0	524.0
11. Jerusalem Artichokes, 500 bush., or 28,000	22176.0	4888.8	599 0	336.0
12. Beets..... 75,000	65850.0	7312 5	1020.0	817.5
13. Buckwheat, 30 bsh., or 1,300	162.5	94.52	177 5	17.5

* "Protein compounds" form the nutritive portion.

CEMENT FOR YARDS AND FLOORS.

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A correspondent of the *Agricultural Gazette* speaks of the value of "tar compost," so called, for forming ground floors of carriage houses, barns, stables, also for walks, barnyards, &c., for which purposes it is represented to be excellent, "being thoroughly dry, wholesome, cleanly, smooth, easily repaired, noiseless under motion, and inimical to vermin, besides being so very cheap, only costing from 3d. to 4½d. [6 to 10 cents] per square foot."

The writer describes his mode of making such floors thus: "Lay down a good solid concrete of broken bricks and tiles or chalk, or both materials mixed together, only they should be broken smallish; having made this quite level, pour on it coal tar, until the rubble is just covered. Then sift through a fine sieve a mixture of coal ash and sand, or coal dust and powdered lime, or *all* mixed together, or any one separately, it makes very little difference. I prefer quicklime, ashes and sand, in equal parts, but I have used lime-dust alone, and found it answer, though it is longer drying, and is not quite so firm. My plan is to sift on plenty, and have the work well rolled or trodden, supplying more siftings as it becomes necessary. The proper quantity of siftings will work in without any trouble at all, if time be allowed and the floor is used. Sometimes two or three coats are wanted, and are always best; often one will do. After the first coating upon the rubble, no more is necessary to be done either for an extra coat or a repairing coat, than to pour down some tar and spread it about with an old brush, covering it with siftings. Any laborer can mend or even make a floor of this sort. * * * The reason I prefer brick rubble to stones is this: I have found that by long wear, a small stone, or an edge of a piece of a larger size, will work up; whereas broken bricks or chalk will saturate partly with tar, and will wear down with the rest of the surface. I think the value of such a bottom for a stable would be greatly enhanced by its impermeability to the drainage from animals."

Another correspondent of the paper above mentioned gives his mode of making a similar cement, as follows:

"Two parts sifted coal ashes and one part of quicklime, to be thoroughly mixed together in a conical heap; then proceed as in mixing up fine mortar, making a hollow in the top of the cone, and pouring in gas tar, not gas water, or half and half, as it sometimes comes out of the reservoir, but the thick tar, and gradually mix as you would mix water with the mortar or plaster, until the heap is about the consistence of pretty stiff mortar. In forming my yards and sheds for cows, and those attached to loose boxes for horses, two years ago, in order that all the fluids should drain towards a tank, I employed this compound, spread about three-fourths of an inch thick, on a surface formed with stone broken very small, and a small quantity of fine gravel scattered over them and then rolled down, to prevent unnecessary waste of the cement. This was laid over, and then patted down with an iron shovel. In the course of two or three days, just before it gets hard, pass an iron roller over it. In the course of a week, if properly done, it will be as firm as stone, and not affected either by drouth or wet in any degree. My yards have been in use, covered with muck during two winters, and exposed dry and clean to the sun during two summers, and I perceive no change. * * * I have also used this covering for the top of stone walls, for which it answers admirably."

USES AND VALUE OF THE MAPLE.

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OUR friend HOLMES, of the *Maine Farmer*, furnishes an interesting, and (of course,) *humorous* article on the uses and value of the various kinds of Maple. He states that there are ten different species of this tree in the United States, five of which flourish in Maine. The use of the wood in the manufacture of various articles of cabinet ware is well known. The *bird's-eye* maple, and the *curly* maple, make some of the handsomest veneering of any kind of wood. No better fuel is furnished for our fires than well-seasoned hard, or sugar maple. The tree is also one of the most beautiful as an ornament, and affords, besides, in its saccharine sap, the most agreeable sweet in nature. In view of the various uses, and the many comforts which the maple affords, Dr. HOLMES almost "bursts into a song." Hear him:—

"We were once in a house, not far off, during a severe snow-storm. The elements were raging with their utmost fury out of doors, but within we had a summer atmosphere, and every thing was as comfortable as an evening in June. On looking around we were struck with the fact, that much of our comfort at that time was founded on *maple*. A brisk fire of maple wood was glowing and crackling on the hearth. The floor of the room,—doors,—sashes,—mantlepiece, and other trimmings, were maple;—the chairs were maple,—the tables were maple,—and that the sum of our maple comforts might be complete, our host brought on some maple sugar for our tea, and some excellent maple vinegar for our pickles. In his front yard were some splendid maple trees, and at a little distance was a beautiful maple grove, which gave a shelter in winter, an excellent shade in summer, and a plenty of good sweet sap in spring, from which he made his sugar and his

beer and his vinegar. His bedsteads were maple,—his bureaus were maple,—his ox-yokes were maple,—his sled was maple,—the felloes of his cart-wheels, his cart-axle and tongue, were maple,—the wood of his harrow was maple,—his roller was maple,—his walking stick was maple, and he had a maple weathercock on his barn; in short, he was *maple all over*. 'If we are not in *Mapledom* now,' said we, as we looked around, 'we don't know where that territory is.'"

SOLAR GAS.

THE editor of the New-York *Farmer and Mechanic*, describes an apparatus which was exhibited and put into operation at the late National Fair, for the manufacture of what has been called *solar gas*. The gas, he says, was made from refuse kitchen fat, whale oil, and other greasy substances, in a retort 7 inches in diameter, affixed to a stove 15 inches wide, 22 inches high, and 24 inches long. The oil or fat passes through a syphon into the retort which is filled with soft pieces of brick; then through water into a gum elastic bag, and from thence through a meter to the burners. A building 600 feet long, it is stated, was lighted through 60 burners, by this apparatus. The flame is said to emit no smoke or smell. The gas, when properly made, is said to exceed all other kinds for brilliancy, cheapness, and cleanliness. It has already been applied to the lighting of many factories, several churches, hotels, and steamboats. A man is about establishing himself in New-York, for the purpose of fitting up apparatus for the manufacture of this gas.

MOVABLE FENCES.

EVERY farmer finds it occasionally convenient to move the division line between his fields. Improvements are made in the arrangement of his lots and crops; and briers and weeds, which sometimes obtain possession under fences, render the cultivation of the ground the easiest and best way for their extirpation. Hence, a neat, cheap, and substantial movable fence becomes a desideratum.

Many farmers are acquainted with no other movable fence than the old-fashioned rail or worm fence, which when "staked and ridered" usually occupies about one rod of untilled ground in width. The broad fence, when neatly and substantially made, is very durable; and from the ultimate cost, and the little ground it covers, is decidedly cheap, and more especially so from the consideration, that time is not lost in constant repairs, nor crops destroyed by the inroads of cattle and pigs, so frequent where some other fences exist. But a board fence, when once built, must stay where it is—it cannot be transferred to another line without an expense nearly equal to its original cost.

In the Cultivator for 1844, p. 251, is given a figure and description of a neat movable fence, represented in the annexed figure, made of separate pieces four feet

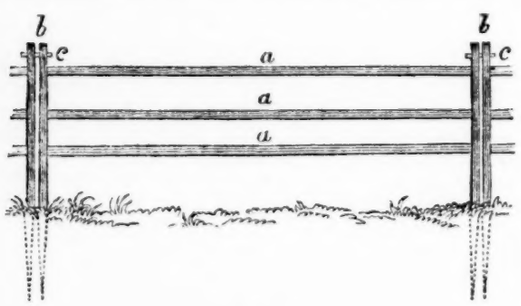

Fig. 70.

high, and eight feet long, driven into the ground 18 inches, into holes made by the crowbar, and withed together at the top. This fence is made of round poles, split into halves, and fastened together by wrought nails, the ends passing into holes in the sharpened end-pieces; and costs from 50 to 60 cents per rod.

We have constructed a neat movable fence for confining cattle as follows:—Hemlock timber, fourteen feet long, and sawed into pieces two by four inches, (*a*, fig. 70,) are morticed into the slender sharpened posts *b*, the two upper bars being 11 inches apart, and the lower 8 inches. Holes bored horizontally through the tops of the posts, admit the pins, *c*, and hold the whole securely together. To confine pigs or sheep, nail a single board at the bottom. Two men will put up ten rods of this or the former kind of fence in one hour.

Another mode which has been found cheap and convenient, is the following: Plank is sawed at the saw-mill, for the end pieces, four feet and a half high, two inches thick, and eight inches wide at bottom, and four inches at top, as indicated by *a*, fig. 71, which represents a cross section of the fence. Into these, boards are fitted, the same in length and width as in common board fence; a narrow, mortised inch board being slipped on to the middle to stiffen them. Cross pieces, *b*, of narrow plank, four feet long, are nailed at right angles to the bottom of the posts or end pieces, and resting on stones, prevent the fence being blown over by wind. The addition of a wooden pin through these cross pieces into the posts, renders the fence stronger. The tops of the posts are connected by the horizontal pins *c*, *c*. It scarcely ever becomes necessary to plow nearer to a fence than two feet, hence these

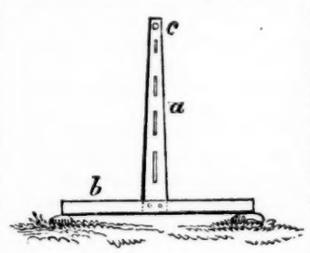

Fig. 71.

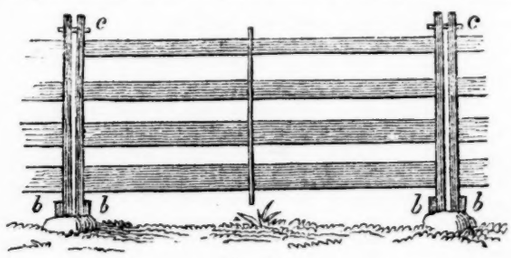

Fig. 00.

cross-pieces do not project too far into the fields. This fence possesses this advantage,—none of it touches the earth, hence very durable wood need not be sought; the *amount* of material it requires is small; and may be obtained to order from any saw-mill; the cost of erection, according to the statement of an acquaintance who has built a considerable extent, is decidedly less than that of common board fence, the digging of post holes and setting of posts being entirely obviated. Fig. 3, exhibits the appearance of the fence, at a side view, when finished.

INDIAN CORN.

WE have before spoken of the value of Indian corn in supporting the animal system, and have alluded to the astonishing performances of the Indians while sustained on meal of parched corn, mixed with water. It appears from various accounts, that the Mexicans are in the habit of using corn in a similar way. It is said that after the corn is parched, it will keep sweet a long time in any climate. THOMAS FALCONER, a writer in the *Agricultural Gazette*, states that he travelled in Mexico with a bag of it for many weeks, and he says, if his "supply had lasted it would no doubt have remained sweet many weeks longer." He states that—"When a Mexican undertakes a journey of many days, at a distance from towns or villages, he fills a bag with the flour of this parched corn, mixed up with sugar, and sometimes a small quantity of spice. With a bag thus filled, tied to his saddle, he considers himself to be well

provided with food. When he reaches a stream, he puts half a handful of this corn in a cup, and filling it up with water, stirs it to melt the sugar, and drinks it off; or, if he gets a fire, he heats the water and stirs in the corn. For many weeks during a journey from the north of Mexico to the south, exposed to some hardships and great fatigue, I lived, and with truth I may say, *fattened* on this preparation of corn. At breakfast, at the halt of the mid-day, and at the setting of the sun, my cup of hot water was on the fire, the parched corn-meal with its sugar and spice was put into it, and in a minute or two my repast was prepared. I thought nothing could be more agreeable or nourishing. I cannot relate the mode by which the Mexicans parch the corn, for I never saw it done. The grinding of it was on the stone so constantly described by all travellers who mention the corn cakes of Mexico, called 'tortillas.'"

THE STRAWBERRY.

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MR. TUCKER—In your Cultivator of this month, you speak of the Iowa strawberry, as a variety recommended by me. Mr. Disney, about 6 years since, brought me plants from the prairies of Iowa. A part were staminate and a part pistillate. The fruit of the pistillates was very small and of no value. The staminate is a good bearer for that class of plants, and the fruit large and handsome; but it will not on an average, produce perfect fruit on one-fourth of the blossoms, nor do I know of any large fruited staminate that will. Its only value is as an impregnator, and for that it is subject to one objection. It is the most vigorous grower that I am acquainted with, and if not watched, will soon root out all the pistillate plants.

The Swainstone Seedling, of which you speak highly, has not with me borne one perfect fruit to 20 blossoms. From England, the British Queen has been obtained as both staminate and pistillate. Which is the genuine is not known. I wrote to Liverpool to inquire, but they acknowledged that they were not aware of the existence of staminate and pistillate plants, but knew the Queen soon became barren. The Deptford Pine, is staminate, and of no value for a crop. The Elton is the same as the Methven Scarlet, Methven Castle, Warren's Seedling. It is pistillate, but produces but few blossoms, and of course is not an abundant bearer. The fruit is next to Hovey's Seedling in size, but of inferior quality, and is the same that was cultivated in Philadelphia, under the name of Kean's Seedling. Of all the large fruited staminates I have seen the Ross Phœnix is the best bearer, but it is of no value for cultivation where Hovey's Seedling, Hudson, Kean's Pistillate Seedling, and other pistillates can be obtained, and their cultivation understood. Till it is, the Cincinnati market will continue to be supplied with more strawberries than New-York, Boston, and Albany united, and the fruit will cost too much to come within the reach of all their citizens.

Cincinnati, July 18, 1846. N. LONGWORTH.

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NOTE.—It must be understood that in the above remarks, MR. LONGW RTH speaks only of his own observation, and in reference to the character of strawberries as exhibited in his own garden or neighborhood. But it should be remembered that climate and soil greatly affect the productiveness of all plants, strawberries in particular. We did not examine the blossom of Mr. WILSON'S Iowa strawberry, but are informed that it appeared to be perfect within itself. At any rate, it is certain that a very unusual proportion of the blossoms produced perfect fruit. Mr. LONGWORTH considers the Elton the same as the Methven Scarlet, Warren's Seedling, &c. We will not now say he is incorrect, but gardeners here differ with him on this point. Again he considers Ross' Phoenix of no value where Hovey's Seedling and some others can be obtained. To this we have only to remark that in Mr. WILSON'S garden we saw both the Ross Phœnix and Hovey's Seedling in beds nearly contiguous, and the former was decidedly the most productive, and fully equal in average size.—ED.

REFUSE OF BREWERIES.

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At a late meeting of the Agricultural Chemistry Association, Scotland, Prof. JOHNSTON spoke of the value of the refuse of breweries, as food for cattle and other animals. He divided the refuse into three kinds, the two first of which are most valuable, viz., the "cummins," or the dried roots of the barley, and the "draff," which we suppose to be what is commonly called *grains*. In reference to the analysis of draff, Prof. J. stated, that it contained about 75 per cent of water, leaving 25 per cent of dry matter—resembling potatoes in this respect, they containing about the same quantities. Twenty per cent of this dry matter was stated to be husk, the rest, consisting of a little starch, sugar, gum, and compounds of protein, chiefly albumen, attached to the husk. "These compounds," he said, "amounted to six-tenths of a per cent in draff." The ash was about one-fifth more than the potato; he thought it therefore, very much like the potato, the latter only containing more of the protein compounds. He stated that the ash of the draff contained one-half its weight of phosphates. "These," he said, are extremely valuable as they supply the material of bones, and also the feeding of cattle as they are contained in the milk, as seen from the following table:"

Composition of Milk of the Cow.

Casein,	4.5
Butter,	3.1
Milk-sugar,	4.8
Saline matter,	0.6
Water,	87.0
	100.

"Milk contains more than half a per cent. of saline matter, chiefly phosphates. Ten gallons of milk contain one-half a pound of them, and 100 lbs. of draff contains the same. Draff weighs about 46 lbs. per bushel; if a cow, therefore, eats one-half a bushel a day, that is, about 25 lbs., it gets but a very small quantity of phosphates—much less than it ought to get. The protein compounds supply casein; now milk contains 4½ per cent. of this valuable substance. It exists in wheat to the amount of ten or twelve per cent, and in oats, to 16 per cent."

Prof J. then spoke of the large proportion of the protein compounds contained in peas and beans, and mentioned the comparative cheapness of these articles for certain purposes. If, for instance, it was wished to have cheesey milk, bean-meal should be given to the cow, on account of the quantity of casein. He thought the "value of draff was more to the cow-feeder than to the farmer, as the former wanted milk. It contained," he remarked, "a large quantity of water; but there was another advantage, as the water was diffused through every part of it; it was therefore much more soluble, as it was brought by this diffusion of the water to something like what it was in the green state; and like green grass it was more soluble in the stomach than hay."

Prof. JOHNSTON spoke of the "cummins." These, we believe, are what is here called *sprouts*—the roots of the grain, which are rubbed off before brewing. He said, "of all the substances he knew, they were the most valuable as dry food. They contained more of the protein compounds than oat-meal, having about 29 per cent. of that substance necessary for forming the curd of milk, and for laying on muscle. The ash contains more than half of its weight of phosphates; and they are therefore valuable for forming bone. Cummins leave about 7 per cent. of ash, while white draff leaves about one."

In this country, in the vicinity of breweries, grains or "draff" afford a cheap and valuable food for milch cows. In this vicinity they can be had at from four to eight cents per bushel—the former being the summer, and the latter the winter price. At these rates, they afford the cheapest food for those cow-keepers who supply the city with milk. We are informed that the

"cummins," or sprouts, are also considerably used as cattle food in this vicinity, and we have no doubt they are valuable, as Prof. Johnston has shown.

INSECT REPELLER.

J. S. STODDARD, of Palmyra, N. Y., has lately adopted a very cheap, simple, and effectual contrivance for preventing all insects from ascending the trunks of fruit trees. It would doubtless be of great value for the canker worm, and it may possibly be of use for protection against the curculio. His trees having been much injured, as he believes, by ants, he has entirely excluded them.

The earth round each tree, is in the first place slightly embanked, and made otherwise quite smooth and level, and then a thin and smooth bed of gravel is made to encircle the trunk, on which is placed a coat of common lime-mortar. This is smoothed with a trowel, so as to leave a circular trough on its upper surface, for the reception of a mixture of tar and whale oil. The width of the trough may be three or four inches, and half an inch deep. The circular bed of mortar approaches within an inch or two of the bark of the tree, and does not touch it. A small lake of this adhesive mixture thus encircles the tree, and through which no insect can pass. The troughs will last one season through, but the frost of winter breaks them up. The quantity of mortar, however, required, is quite small, and being a cheap material, and applied in a few minutes, the cost is very trifling.

Fig. 73.

The troughs were first filled with unmixed tar; but a

Fig. 74.

crust forming during cool nights, on which the insects could walk, the addition of one quarter whale oil was found to obviate the difficulty, while the mixture was not at all affected by the rain.

The above figures represent the contrivance: Fig. 73, being a perspective view, and fig. 74, a cross section, on a larger scale, where *a* is the the trunk of the tree, *b*, *b*, the soil or gravel on which the bed of mortar rests, *c*, *c*, the mortar bed, and *d*, *d*, the circular lake of tar and oil.

THE WHEAT MIDGE.

The insect here called "the weevil," though improperly so, which in the larva state does so much damage to our wheat, is known in England under the name of the "Wheat Midge." It frequently occasions great damage there; the crops being sometimes lessened from this cause to the amount of from forty to fifty per cent. No very effectual means of preventing the ravages of this insect seem to be known either in Europe or this country. They prevail in great numbers in some seasons, and in others are greatly diminished. The causes of this variation are supposed to be certain states and conditions of the atmosphere. Burning weeds to the windward of fields infested with them, has sometimes, it is said, proved of advantage. But the greatest destruction of the insect is doubtless effected by means wholly independent of human aid. In this country, according to Dr. FITCH, (see his Essay on the Wheat Fly,) the common Yellow Bird devours immense numbers of the larvæ; they are also devoured by several kinds of carnivorous bees, and killed by ichneumon flies.

In a lecture on insects destructive to crops, lately delivered before the London Farmer's Club, by Mr. Baker, a report of which we find in the *Farmers' Magazine*, some very interesting facts are given in relation to the destruction of the Wheat Midge by the ichneumon flies. Of the latter, he states, there are about five hundred species, several of which are destructive to the Wheat Midge and caterpillar. "I have," says Mr. B., "frequently observed these small black flies, or 'nidgets,' as we call them in Essex, at their work of destruction. They will insert themselves between the wheat and the chaff, and immediately attack the Wheat Midge. They are very voracious, and will strike maggot after maggot in rapid succession, as fast as they can pass from one to another. In passing up a field one day, on my way to market, I saw a number of these black flies on an ear of corn which I plucked, and upon exmination of it, by opening the chaff, I found they attacked the Wheat Midge most voraciously. I carried it to market, and examined it again when I got there; but their voracity continued just the same. In striking the maggot, they insert an egg in its body; and the maggot then gets into a place of concealment and dies, just as sheep seek concealment when suffering in a similar way. The little insect, which becomes the ichneumon, subsequently emerges from the dead insect: it is first formed into a chrysalis, and becomes a fly the following summer. I had a number of these insects, which I had intended to bring with me, but they escaped my memory. They attack caterpillars by hundreds, and seem so determined in their endeavors to effect their object, that the more you attempt to frighten them away, the more bold they become. It is to this class of flies that we are so much indebted for ridding us of the pest—the Wheat Midge."

DISEASE IN HORSES.

FRIEND TUCKER—According to promise, when at your office the other day, I proceed to give a description of a disease that many horses were troubled with the past winter in this and the adjoining counties. As a general thing, it did not prove fatal, but produced abortion in mares in every case of which I have had any knowledge. I shall give the particulars of those cases only that occurred in my own stable, seven in number, five being mares in foal by a fine English blood horse.

Symptoms: Stiffness in all the legs, moving only with difficulty; running of the eyes, with an inclination to keep them closed, and but little appetite; one and sometimes both hindlegs swollen and quite sore to the touch of the hand, with a rapid falling off in flesh.

These symptoms continued four or five days, when the animals would again resume their former condition. Three of the above mentioned mares worked steadily in the team; two of these did not lose their foals until four weeks or so after their recovery, when they had regained their flesh and spirits. The last of the three lost hers immediately after beginning to recover; the other two in foal were driven occasionally. One of these lost hers like the last of the three above mentioned; the other kept hers two or three weeks. One young mare, driven part of the time, but which was not with foal, exhibited symptoms like the others. The seventh and last, a colt, two years old past, lay upon his side nearly the whole of the time, four or five days. He occupied a stable where there were three other colts and a mare with foal, none of which were affected. I thought it was evident that they took it from each other, and were taken about two weeks after being exposed; but the case of the colt in the second stable would not warrant that conclusion. I also purchased a working mare about that time, and put her in the first stable, where the six first mentioned cases occurred, and she was not affected; she being the only one in that stable that escaped. These cases occurred from first of 2nd mo. (February) to first of 4th mo. (April).

The horse spoken of, by which these mares were with foal, was purchased late last season by myself and one of my neighbors. He died suddenly last first month (January), while I was a few days from home. He was

driven one or two miles in the evening, seemed very lively and playful, and was put in his stable about nine at night. When first seen in the morning, he was rolling, tumbling, and pawing, frothing at the mouth, sweating, &c. and died in one or two hours. He had always appeared well and hearty since he came into our possession. At the time he was taken, he was thought to be healthy and gaining in flesh. I am told by those present, that a part of the contents of the stomach were found to have exuded through the maw, which organ looked more like a sieve or network of thread than any thing else. I cannot think he was killed by worms, because they were unable to find any, except a very few bots, which I think could not have so wholly destroyed the maw in so short a time; and if they had been long at work, the horse must have shown some symptoms of distress.

I have tried to be as particular as possible in describing all the above cases, that those having any knowledge of such things may be able to suggest the causes through the columns of the Cultivator, coming as it does directly before the eyes of so many of our farmers, breeders and raisers of horses. I wish I could say it comes to *all* our farmers; for if there is any other plan by which the farmer can invest a dollar and make a greater per cent profit thereon, I have yet to learn what that plan is.

I want to ask of the contributors to your columns more attention to the interests of the horse; more information in regard to the best breeds, and directions in breeding and rearing them, that we may learn to raise less worthless nags, and lose less valuable ones. We have enough to risk in raising horses to warrant our taking time and trouble in learning to avoid as many mishaps as possible, and have the best animal when reared. One way we sometimes miss of having a valuable horse, for sale or use, I consider altogether needless; I mean a miss in training or breaking. Although there are various dispositions among horses as among men, yet if we deal justly with the colt, while in training, the horse will most certainly do us justice in turn.

JOHN KEESE.

Peru, 7th mo. 13th, 1846.

PROPER TIME FOR CUTTING GRASS.

IN an article in our June number, on "Hay-making," we advocated the practice of cutting grass for hay before it shall have gone to seed. The reasons given for the practice were, that plants at the time of flowering contain starch, gum and sugar, which are known to nourish animals, and that in the formation of seed these substances are exhausted from the stems and leaves, and woody fibre deposited in their place. We have seen but one attempt to controvert this reasoning, and we are inclined to believe the general views set forth in our article, are in agreement with the opinions and practices of our best farmers; nevertheless we cannot forego the satisfaction of further strengthening our own arguments, by adducing others which seem to have been founded on the closest scientific investigation. The Quarterly (Edinburgh) Journal of Agriculture for July last, contains a notice of a Government report lately published, on the "*Chemical Nature of Grass and Hay as Food for Cattle*," from which we extract the following:

"Grass, as may be readily imagined, varies considerably in its composition, according to its age, and also, as may be expected, according to its species. The experiments undertaken during the present investigation, have sufficiently demonstrated the first of these positions. But the second is still open for inquiry, since chemists who have previously analyzed grass and hay have omitted to particularise the botanical names of the plants which they have examined. The grass used in the present experiments consisted almost entirely of Rye-grass (*Lolium perenne*). The amount of solid matter in this grass varied from 18 to upwards of 30 per cent, according to the early or late period of its growth. When grass first springs above the surface of the earth, the principal constituent of its early blades is water, the amount of solid matter being comparatively trifling; as it rises higher, the deposition of a more indurated form of carbon gradually becomes more considerable, the sugar and soluble matter at first increasing, and then gradually diminishing, to give way to the deposition of woody substance. * * * If, as we have endeavored to show, the sugar is an important element of the food of animals, then it should be an object with the farmer to cut grass for the purpose of hay-making at that period when the larger amount of matter is contained in it. This is assuredly at an earlier period of its growth than when it has shot into seed; for it is then that woody matter predominates—a substance totally insoluble in water, and therefore less calculated to serve as food to animals than substances capable of assuming a soluble condition. This is the first point for consideration in the production of hay, since it ought to be the object of the farmer to preserve the hay for winter use in the condition most resembling the grass in its highest state of perfection."

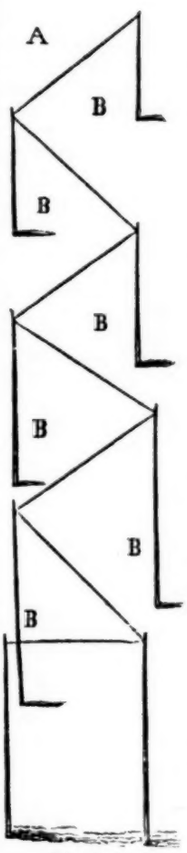


Fig. 75.

CORN DESTROYED BY CROWS,

EVERY farmer is aware, is often a serious loss. Tarring the seed is effectual; but where several bushels per acre are sown for raising fodder it is entirely out of the question. Stretching cords horizontally on upright poles about the field, has been resorted to with success, and is becoming common. Dr. Cook, of Sodus, lately showed us the result of an experiment which was somewhat interesting, as exhibiting the singularly cautious nature of these black scoundrels.

An oblong piece of land was sown, five bushels to the acre, broadcast, for fodder. A cord was stretched on poles, in a zigzag direction, from one end of the field to the other, as shown in the annexed figure; all the parts of the field indicated by the letters, *B*, *B*, *B*, being in angles formed by two straight portions of the line, were wholly untouched by the crows; but the part *A*, though near the line, but not inclosed in an angle, was stripped clean by these marauders

.....

KILLING INSECTS.—The Genesee Farmer says, they have tried ashes, salt, soap-suds, decoction of tobacco, and killing bugs with the fingers, for protecting cucumbers and melons. The latter they find most effectual. We never heard of its not being effectual, when vigorously applied—other remedies often fail.

SOAP AS MANURE.—T. Dalton, a silk dyer, says, in the London Agricultural Gazette, that he uses 15 cwt. of soap weekly, to discharge the oily matter from the silk, and forming of itself a kind of soap,—the whole of which yields from 4000 to 6000 gallons of strong soap-suds per week. This he has lately applied to his farm, and "its effect is most extraordinary." It has been used only one season, and its results cannot be accurately given, but he considers it more powerful than any other manure; and he thinks if farmers were allowed the drawback of the duty on soap used as manure, as manufacturers are, it would soon supercede guano.

RICHNESS OF MILK.—The Boston Cultivator says that Alderney cows usually give milk so rich, that 7 quarts will often yield a pound of butter; and that of other cows it requires nineteen or twenty quarts. The milk from the famous cow, Blossom, required 19 quarts for a pound of butter.

VITAL ACTION OF PLANTS.

"There are some chemists, learned in the highest degree, who speak with confidence of pounded glass being used as manure; and another, eminent in his peculiar science, speaks of the power of a plant in its wonderful action of growth, to decompose the sides of the glass vessel in which it is grown, and appropriate portions for its nutriment. I believe it." (*Colman's European Agriculture, Part VI., p.* 11.)

It seems to us, there can be no question that living plants do exert a force similar to that above mentioned. This opinion, so far as held by the writer, was originally derived solely from actual observation; though he has since been much gratified to find it entertained by various individuals of acknowledged attainments in the science of vegetable physiology. We alluded to this subject in our June number, under the head of "Manuring by Green Crops," but advert to it again at this time, for the purpose of bringing forward the remarks of others in support of our own.

The theory to which we refer, is very appropriately spoken of in an article published in the Transactions of the Highland Agricultural Society, on the "Theory of Manures--their Agency as fertilizers;" by JOHN TOWERS, Esq., a well known able writer. Mr. T. directs his remarks chiefly to an illustration of the *modus operandi* by which the decomposition of manures and their assimilation by plants is effected. He argues that the value of common animal manures, as the food of plants, consists in furnishing a source of *carbonic acid*—this substance being produced, in his opinion, "under the action of the roots of plants, or rather by their *vital principle*."

Mr. TOWERS had given this subject some consideration in a previous article, some portions of which he copies into the one to which we first referred. In the former article, he observes it is generally supposed that manures become the food of plants by "being *dissolved* in the moisture of the soil," the solution being taken up by the roots of the plants. He thinks this doctrine is involved in doubt and uncertainty. He admits it is difficult to ascertain precisely what part manures actually perform in the support of vegetables; for "it is quite certain," he says, "that not a single particle of the most impalpable powder can be made to enter into the vessels of the roots; and it is equally certain that water —boiling water—can dissolve only a very small portion comparatively of the most reduced spit-dung. But every observant gardener or farmer must have remarked that when manures are added to earths in due proportion, and not so as to glut the soil, the whole mass vanishes; and though for a time the earth be somewhat blackened, it gradually acquires its natural tint, and loses every trace of the decomposable substances which were added to it. Another fact is apparent, namely, *that under the stimulus of a vegetable crop, land frees itself from the manure sooner than if it were left to act solely by its own unassisted energy.*"

In regard to the special agency by which these changes are produced, Mr. TOWER remarks that "every particle of putrescent manure which is given to the earth must undergo a decomposition, which can only be induced by the play of chemical affinities, and those so powerful as to develop the elements of water, to re-form water; also the elements of hydro-carbons and of ammonia; and to model and incorporate all these so as to produce that specific crude sap, which is exactly appropriate to each individual vegetable.

"*Chemical agencies* involve electric induction, and water can only be electrically decomposed, as Faraday has shown, by the passing of a current. Now in the germination of seeds, water is decomposed, and new modifications of its elements effected. But to what prime motor cause are we to look as that which gives the first spark, or rather what the *medium* through which that elemental stream passes, which induces those mysterious decompositions and recombinations? * * * Admitting that the voltaic apparatus furnishes the type of the current, and knowing the electric condition of the atmosphere, what other agent need be sought? Manures *are* decomposed most rapidly under the action of a vegetable crop, and atmospheric electricity rushes through every pointed termination of the structure; we cannot, therefore, doubt the superior efficacy of a *bulk* of manures like those of the farmyard and fold, over the mere top-dressings and scatterings of guano or its representatives; as by the former it enjoys all the *direct* results of organic developments, and obtains a permanent fund of carbonaceous substances whence to derive an abundant supply of carbonic acid, whereas the latter may be considered as the *remains of laboratories already effected*, and therefore deficient in one of the chief requisites of vegetable nutrition."

EARLY VEGETABLES—DRAINING, &C.

The earliest vegetables I have seen in Western New-York this season, were at Aurora, on the east side of Cayuga Lake. Here green peas were grown and eaten by the 30th May, stringed beans by the middle of June, and at this time, 1st July, new kidney potatoes are in tolerable perfection. On this day, I saw well formed ears of Indian corn, nearly eight inches in length, in the garden of Eleazer Burnham, Esq., but this has been an uncommonly early growing season, no frosts have interrupted vegetation on the margin of this warm lake, since the tenth of April.

Aurora presents the rare spectacle of a rural village with well-conditioned streets, side-walks, sewers, &c., without its almost universal accompaniment, *corporation taxes*. Here are side walks of smooth calciferous slate, beautifully level and square, laid with a care not to encumber the shade trees. It is true that the width does not exceed six feet, but this only proves the unpretending character of these villagers, who, perhaps, neither anticipate nor wish for an extensive population. The only truly ambitious house here, once struck me in painful contrast with the rural simplicity and floral beauty which adorned the others. But at this time its stately proportions are only seen through graceful circling avenues of deciduous and evergreen trees, and flowering shrubs.

From Aurora to Poplar Ridge, four miles east, the land rises six hundred feet; this rise is by a succession of low parallel ridges, and intervening swales. The soil is generally clay loam, with quartz and lime pebbles. The ridges are warm, first-rate land; the swales formerly produced good corn and grass, but as the light vegetable mould gave way under successive tillage, to the hard subjacent clay, vegetation suffered from surplus water. Almost every farmer who first settled this section, has sold out and gone west; so that the land along this road from Aurora to Poplar Ridge, is principally held by two or three wealthy families. One of these proprietors, Augustus Howland, an intelligent, enterprizing young man from New Bedford, has made many miles of open and blind ditches; in some places cutting deep and wide on the road side, and then leading the united surplus water into a deep gully running to the lake. It was both a refreshing and a novel spectacle in this champaign country, to see water running briskly through artificial ditches on the road side, on this first of July, with the thermometer at 90°; especially when we reflect that this water redeems thousands of acres from aquatic swales to good wheat land.

It is often said that so much land in the hands of a single man, is subversive of the ends of a healthy, busy, intelligent, democratic population. Be this as it may, great credit is due to Augustus Howland, morally and physically, for the personal vigilance and attention he gives to these great improvements.

HESSIAN FLY.—The Genesee Farmer says, "Taking Western New-York together, the loss from the fly alone will doubtless be at least 500,000 bushels. Late sowed wheat has escaped the best. William Garbutt, who plowed up 14 acres of wheat destroyed by the fly, to sow with oats, ascribes his loss mainly to early sowing, at or near the first of September.

FACTS AND OPINIONS

Condensed from various Exchange Papers.

.....

POTATOES.—H. N. Sherman in the Boston Cultivator, is led to conclude from experiments, that it is not very material what the size of the seed is, if the land is good. He planted well manured moist loam, in three ways. One piece had two middle sized potatoes in the hill; the next, one large one; and the third, one small one. The result was, the two potatoes in a hill produced many potatoes, but of small size. The one with a large potato in a hill, "produced less amount, but of larger size." The one small potato in the hill, "gave the least in amount but the largest and most even in size."

GUANO FOR PEACH TREES.—W. W. Mills, of Smithtown, L. I., says he applied guano successfully as follows:—The trees were on the decay, and nearly destroyed by the worm. The first of June, he removed the earth from the roots, destroying the worms, then sprinkled a handful of guano about the roots, wetting it afterwards by sprinkling water. The guano was then covered with a peck of pulverized charcoal to each tree, which was also wet thoroughly. "The trees immediately changed their color, grew astonishingly, and ripened their fruit in great perfection."

LENGTH OF CORN ROOTS.—As a proof of the importance of deep plowing, Ellsworth mentions the following fact. There are now in the National Gallery, corn roots taken from one side of a hill of corn laid bare by a freshet, sixty days after planting, some of the larger roots of which, covered with lateral branching roots, were more than four feet long. The aggregate length of all the roots in the hill, fine and coarse, were estimated at over 8000 feet.

SUBSOILING AND MANURING.—C. F. Crosman, of Rochester, says, in the Ohio Cultivator, "I raised 410 bushels of carrots on one-quarter of an acre; 550 bushels of potatoes on two acres; about 600 bushels of onions on one acre; and over 1000 bushels of beets, (several kinds) on three-quarters of an acre. I plow with a double team as deep as possible, and subsoil each furrow—adding plenty of compost manure."

PROFITABLE CROPS.—The following is the produce of 10 acres of land, for 3 years, belonging to Charles Tenney, of Riga, Monroe county, N. Y.

40 bushels of corn per acre, at 50 cts., ...	$200.00
30 " " wheat, " at 87½ cts.,...	262.50
2 tons hay per acre, at $10 per ton,.....	200.00
35 bushels of clover seed, at $7, ...	245.00
3 colts wintered on clover straw,.....	25.00
	$932.50

The expense was estimated as follows:—Interest on land, $50 per acre, $105; manure, $3; plowing both crops, $20; seed, hoeing &c., $35; harvesting, $60; cleaning clover seed, $23. Total, $264; leaving a nett gain of $686.50, or $68.65 per acre.

FRUIT TREES—GOOD CULTIVATION.—We have often spoken of the value of giving young trees, good mellow cultivation. The Boston Cultivator says that W. Flanders, of Woburn, set out a young orchard six years ago, on good rich land, and has since given it good but economical cultivation, by tilling and cropping. The trees are now from four to six inches in diameter. Some of the trees have already yielded nearly a barrel of fruit.

LARGE TREE.—Prof. Lindley, in his "Vegetable Kingdom," says, "Martius (a careful and accurate scientific traveller,) represents a scene in Brazil, where some trees of this kind, (locust) occurred of such enormous dimensions, that fifteen Indians, with outstretched arms, could only just embrace one of them. At the bottom they were 84 feet in circumference, and 60 feet where the trunks became cylindrical. By counting the concentric rings of such parts as were accessible, he arrived at the conclusion that they were of the age of Homer.

CULTIVATION OF PEACH TREES.—A great many farmers usually let their peach trees take care of themselves,—that is, suffer weeds and grass to grow round them, or to stand in meadows, pastures, or grain fields. Potatoes, being a low, hoed crop, have been found one of the most favorable; yet J. W. Thompson, of Wilmington, Del., who is well acquainted with the management of the great peach orchards in that state, says, "After the trees commence bearing, no other crop of any kind should ever be grown amongst them, as I have known two rows of potatoes between a row of peach trees, not only to affect the fruit, but seriously injure the trees." He adds that they should be regularly plowed three or four times in the season.

CULTIVATION OF ORCHARDS.—At a late agricultural meeting at the State House, Boston, Mr. Porter, of Danvers, stated that a few years ago, he had an old orchard of four or five acres, which had not been plowed for thirty years, which his neighbors said was worthless. He plowed it, manured it well, and took off a good crop of oats. He pursued the same course the two following years. The third year, he had seven tons of oats, cut before ripe for fodder, and two hundred and eighty barrels of apples. Previous to plowing, he did not get more than eight barrels a year. It may be proper to add, that although sown crops with manure, do well for full grown orchards, low hoed crops, only, as potatoes, beets, and turneps, will answer for young trees.

SALT FOR PLUM TREES.—The Maine Farmer says, that P. C. Holmes of Gardiner, had several plum trees planted in a soft clayey loam, which had not borne any fruit for seven or eight years. In the fall of 1844, he strewed a quantity [how much is that?] of salt around the roots, and in 1845, they were full of fruit.

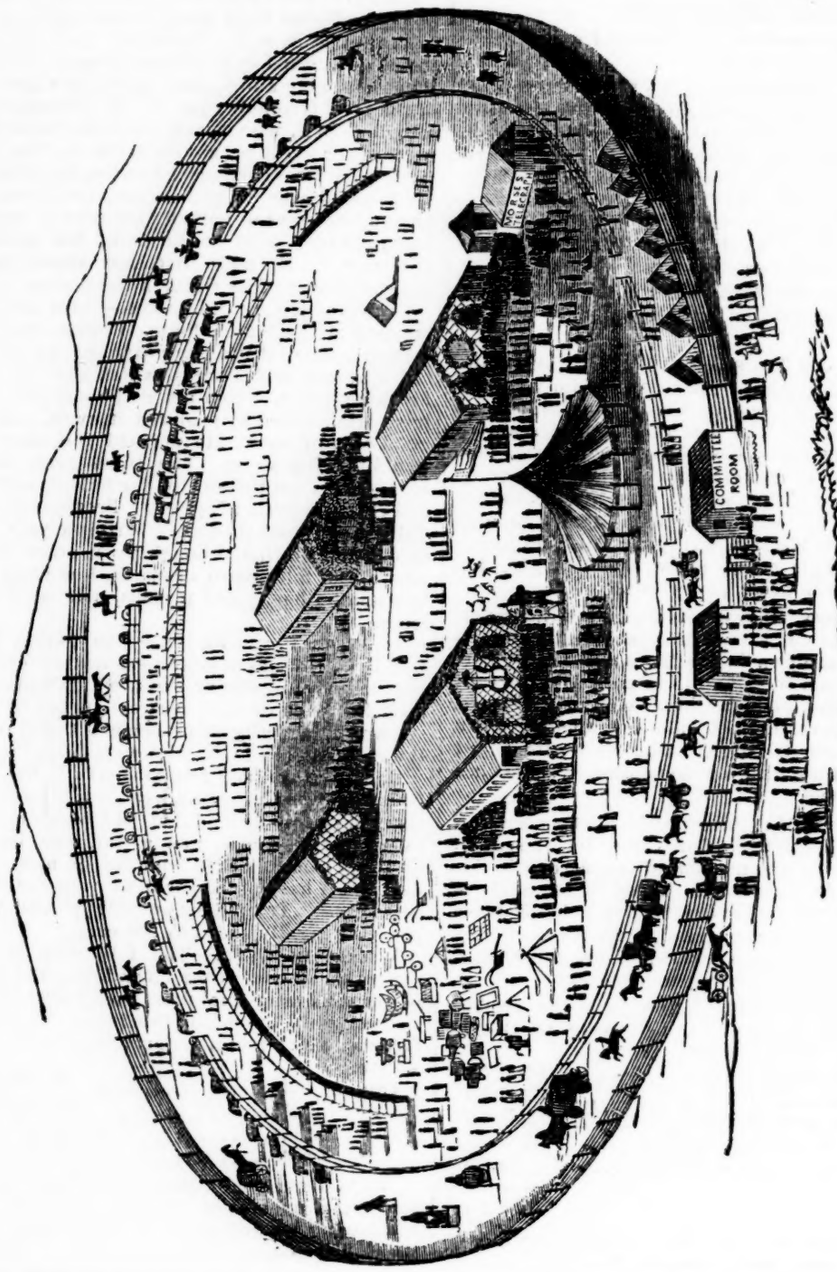
CORN RAISED FOR FODDER.—D. S. Beers, Knox Co., Ohio, in Ohio Cultivator, says, "I plowed about three acres of swamp ground that had become dry, but was overrun with weeds, and sowed four bushels of corn on it. From this I cut ten tons of most valuable fodder, and it has proved the most valuable crop I raised this year." Tripple the amount of seed would probably have greatly added to the crop.

WHEAT IN OHIO.—The following is given as the aggregate amount of the several wheat crops for the state of Ohio, during the four past years; and shows very strikingly the extent of the impoverishing system of farming which too much prevails there as well as elsewhere.

Crop of 1842,.....	25,387,439	bushels.
" 1843,.....	18,786,705	"
" 1844,.....	15,969,000	"
" 1845,.....	12,000,000	"

DRAUGHT OF PLOWS.—The London Ag. Gazette states, that upon an average, 35 per cent. of the labor of plowing is attributable to the weight of the imple ment, 55 per cent. to the operation of cutting the furrow slice, and only 10 per cent. to the action of the mould board. Hence more attention should be directed to lessening weight, and improving the cutting part, while the form of the mould-board should not be overlooked. The English plows, it is true, are usually heavier than the Yankee plows; but this estimate of the strength required for cutting must appear nearly correct, when it is remembered how much more force is required to thrust a spade through a tough sod, than merely to lift the weight of the earth removed.

STRONG WOMEN.—Henry Colman says, the most remarkable instance of strength and endurance is perhaps to be found in the fish women of Edinburgh, who attend market from a distance of more than two miles on foot. Their load of fish, in baskets, slung upon their backs, often weighs 150 lbs., and has been known to weigh 200 lbs. They stop to rest but once on the road, and after their arrival are found crying their fish in all parts of the town. "How many," asks Colman, "of the Chestnut-street, or Washington-street, or Broadway belles, would it require to lift even one of these loads from the ground?" He says these women are neat in appearance, of fair complexions, and not by any means bad looking.



VIEW OF THE STATE CATTLE-SHOW AT UTICA, 1845.—(Fig. 76.)

EXHIBITION OF THE N. Y. STATE AG. SOCIETY.

WE presume it is recollected by most of our readers, that the New-York State Agricultural Society holds its annual Show and Fair at Auburn, on the 15th, 16th, and 17th of the present month. The trial of implements will take place on the first day of the exhibition; the principal show of animals and articles on the second day; and the address with the report of various committees, will be made on the third day.

From the very favorable season, and the bountiful crops of almost every description, which have rewarded the husbandman's labors, we look for an unusually extensive and rich exhibition. In stock, especially, we shall be much disappointed if there is not a wider competition in every class, than there was last year. The pastures have afforded abundant feed, and cattle and sheep cannot fail to be in fine condition; so that their owners can not urge the excuse that they are kept at home because they are not in "high order enough" to show. We look, therefore, for a general turn-out.

Besides the advantage of competing for the premiums, a strong inducement to take stock to the show is presented in the opportunity it affords of making sales or exchanges. This was carried on last year to a great extent, and we have no doubt with much advantage both to purchasers and sellers. In fact we believe this may be made one of the most important features connected with these exhibitions. We hope, therefore, that the principle of *Fairs* may be more generally entered into, and become fully established. Let it but be generally known that on these occasions large numbers of the best horses, cattle, sheep, swine, poultry, implements of husbandry, &c., &c., will be brought for the purpose of sale, and thousands from all parts of the country will attend with the view of purchasing.

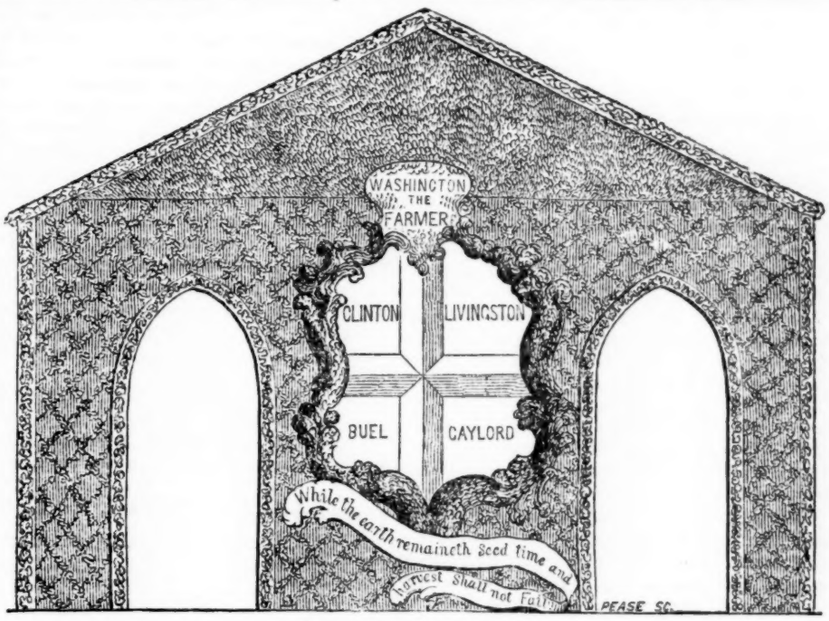
Auburn, it will be recollected, is in the midst of a great fruit region. Perhaps no part of the state has made a more rapid improvement in all branches of horticulture, within the last fifteen years; and we expect that the amateurs of Western New-York will vie with each other in presenting such a display of the products of their gardens and orchards, as cannot fail

to be especially attractive.

We presume our Auburn friends have made good progress with their arrangements, and that by the arrival of the day of exhibition, they will be prepared to announce that "all things are now ready."

We give herewith, from the Society's Transactions of last year, a cut of the show-ground at Utica, and also an end view of "Floral Hall," one of the buildings erected within the enclosure on that occasion. The plan for the present exhibition, which we saw not long since, is well designed; and from a handsome perspective drawing, which was shown us, of the grounds, with the various buildings and fixtures, we have no doubt that they will be found as perfectly arranged and completed as on any former occasion.

The customary liberality of the Railroad Companies will no doubt be extended in reference to the transportation of stock and articles designed for the Show, and the usual facilities of low fares, &c., for passengers, will be granted.



FLORAL HALL.—(Fig. 77.)

JONATHAN'S ACCOUNT OF THE CATTLE-SHOW.

.....

Did y'ever to the Cattle Show go?
What kicking, and pushing, and goring—
Cattle in pens—the pens in a row—
And *tarnal* great hogs, there, a snoring.

There's sheep too; ewes, and wethers, and lambs—
Some *Bucks*; (some are'nt *in pens* far's I know,)
There's sheep of the Dons—some Uncle Sam's—
Some Natives—some "real Merino."

There's a tug too, or trial of strength,
With hawing and geeing and scolding,
Just to twitch a great stone a foot's length—
"Haw! haw buck!—why don't ye!—gee golding!"

Then for plowing they give a reward,
And *cute* as a squirrel that burrows,
Off start the plows, cut through the green sward,
A turning the *slickest* of furrows.

And then sir, in a room that they've got,
There's an "ocean of notions" display'd,
There's blankets, and stockings, and—what not—
That the folks in their houses have made.

There's bonnets, both of straw and of grass,
And cloth too, of woolen and linen,
And there's yarn, and there's thread, smooth as glass,
That *gals* for themselves have been spinning.

There's hats, and there's shoes, and there's leather,
And there's—I can't tell half now, I fear—
Got a prize—gee ho! altogether!
And I'd go to the show twice a year.

PROTECTING SHEEP FROM DOGS.—Put with the sheep a few active cows with their calves, with a few two or three year old steers. Then set a dog on the sheep, when the cows to save their calves, will make a terrible war upon him, the steers joining pursuit. After a few such lessons the cows may be removed—the steers will do their office. Sheep pasture being too short for four year old steers, they may be successively removed, and younger ones added.

CRANBERRIES.—Five hundred and seventy-five bushels were sent to Boston last year from the town of Marshfield, and sold for $1,100.

BUGS ON SQUASHES, are repelled by sprinkling a mixture of soot and sulphur on the young plants while wet with dew in the morning.

KITCHEN CHEMISTRY—NO. III.

.....

STARCH.

.....

STARCH exists in most plants, and in all parts of them. It may be obtained largely from different grains, and from the tubers of the potato. When the flour of wheat, corn, barley, or oats, is mixed with water, and washed in linen cloth with pure water, a milky liquid passes through, from which a white powder gradually settles in the form of *starch*.

It is procured in different forms or states from various other substances. In the form of Tapioca and Cassava, it is obtained from the root of the *Jatropha manihot*; in the form of Arrow root, from the *Maranta arundinacea*; and from the palm known as the *Sagus faranifera*, the Sago of commerce is obtained. In whatever plants it is found, it exists imbedded in the celular tissue in small white grains, which are globular, oval, and sometimes irregular in shape. Those of the potato, which are largest, and which may be easily seen by a microscope, are not more than 1-250th of an inch in diameter; those of the arrow root, which are smallest, do not exceed 1-600th of an inch. These grains are perfectly insoluble in cold water; each grain being formed by a number of minute concentric layers, like the coats of an onion, which become harder and tougher from the centre, the outer being so hard, that the globules resemble small bladders filled with a softer substance, and which protect the interior from the action of cold water. Hot water, however, causes these globules to burst, the starch is discharged, and thus it becomes soluble in hot water, except these outer layers or skins, which merely floating in the water, give it a peculiar opalescent aspect. If this solution be dried at a gentle heat, and then digested with cold water, these little films may be separated by a filter or fine thick strainer, and a transparent solution of starch obtained

The usual preparation of starch, consists, first, in breaking the texture of the plant by rasping or coarse grinding, but not so as to break the globules. Being then thoroughly mixed with cold water, the globules fall or are washed out of the ruptured cells, and are carried off by the current, without being dissolved, and from which they fall in a copious white powder, or in the form of a precipitate. When obtained from grain, the flour is employed; when from the potato, the raw tuber is washed, peeled, and grated; from the sago, the pith is used; and by a process similar to that used for the potato, arrow root is procured from the *Maranta arundinacea*, and the cassava from the Manihot. When the latter is dried by agitation in a hot place, it be-

comes tapioca, by a partial transformation into gum, and perhaps a small portion of sugar, all three of these substances being substantially the same in their composition. The starch from the sago palm undergoes a similar change, when it becomes the sago of commerce.*

The starch of commerce is obtained by mixing coarsely ground wheat in vats with water, where it remains two or more weeks, the starch settling to the bottom undissolved, and the supernatant liquor undergoing a slight fermentation, which separates some impurities. The sour liquor is then drawn off, and the precipitated starch washed in sieves, through which the starch in an an impure state, passes with the water. It is again washed, drained through boxes lined with linen or canvass, and afterwards stove-dried in paper, during which it cracks into prisms as usually seen.

From the protection afforded by the outer coating of the starch globules, this substance is but slightly affected in potatoes injured by the rot; hence the success which has attended the abstraction of potato-flour from partially diseased tubers.

Wheat, rye, and barley flour, consist of from one-half to two-thirds starch; Indian meal from three-quarters to four fifths; rice flour, more than five-sixths; oatmeal over three-quarters; buckwheat about one-half; and pea and bean meal not quite half. Potatoes are about three-quarters water; about three-fifths of the rest is starch.

SUCCESSFUL GARDENING—PRODUCE OF ONE ACRE.

The capability of our soil is but partially understood. With skilful management, it may be made to yield great burthens and profitable returns, where good markets are available. A few days since, a person (I am not allowed to give his name for fear his landlord will raise his rent!) gave me the following as the produce of one acre of land within one mile of the capital, in 1845. The soil is a tenacious clay, and has been cultivated as a garden for many years, but never considered remarkable for its fertility.

It must be remembered that prices ranged high last year, which will account for the great amount received for the articles, viz., in round numbers:

100	bushels	potatoes, sold at	4s.	$50 00
32	do	corn in the ear, ...	3s.	12 00
65	do	onions, ...	4s.	32 50
13	do	carrots, ...	3s.	4 87
8	do	parsneps, ...	4s.	4 00
7	do	beets, ...	3s.	2 62
800	cabbages, ...		3c.	24 00
Horse radish, sold for				42 00
Fruit,	do	.....		10 00
Pigs fed on refuse of garden, ...				26 00
				$207 99

No manure was applied except what was made by the pigs; but the great produce is ascribed to the use of oyster-shell lime, at an expense of one dollar and fifty cents per year for three years. "It was wonderful," he says, "to see how the ground would heave and swell after every rain."

Lime, for agricultural purposes in this section, has not been very extensively used. Judge Buel tried some experiments with the Helderberg stone lime, but could never perceive any beneficial results from its application, and therefore abandoned its use. Probably if he had tried it in a clay soil, the results would have been different.

In Pennsylvania, Delaware and Maryland, lime has been pretty extensively used, and the lands have been nearly quadrupled in value in consequence. In advertising a farm for sale, as a recommendation, the amount of lime recently applied is particularly set forth, as well as the proximity of limestone.

It is not generally known, I believe, that a kiln for burning oyster-shell lime has been erected within a few years in the south part of the city by Mr. Warner and Sons, where it is afforded at six cents per bushel.

I am informed by the proprietors that their sales have increased very considerably for the past year, and their future prospect is quite flattering. Many of our farmers have been experimenting with lime, and appear well pleased with its operation. Several thousand bushels have been taken down the river to enrich the soil, and it is hoped that those who have tried it, whether successful or unsuccessful, will communicate the results through the medium of the Cultivator, for the benefit of others.

There is one fact, that has been communicated to me, which is entirely new, in regard to the action of lime, and that is, its effects are greatest in a lime soil or lime region. Can our chemists account for this?

C. N. BEMENT.

Bement's Amer. Hotel, Albany, Aug. 1846.

* By a process not dissimilar, the starch of grains is converted into sugar by the saccharine fermentation in malting, and in germination; and starch is also converted into a brown substance, at a temperature of about 300 degrees, known as starch-gum, or British gum, which is used as a substitute for gum arabic by calico printers in thickening their colors.

AGRICULTURAL STATISTICS.

To the Editor of the Cultivator:

DEAR SIR—It appears to me that your correspondent J. L. H. has greatly over estimated, not only the extent of the error to which he refers in the agricultural statistics prepared by me, and published in your June number, and more fully in the volume of Transactions of the Society for 1845, but also the practical consequences of whatever errors there may be in that statement. The items furnished by me were taken from the official returns of the marshals on file in the Secretary of State's office: and in respect to the crops to which he refers, as well as that of wheat, no one, it seems to me, could well have failed to understand that the quantity harvested or the produce as returned had reference to the year preceding, and the number of acres under each particular crop to the present year; consequently, that in striking an average, it was upon the assumption, which I apprehend will generally hold true, that taking the whole county together, for a series of years, the proportions between the number of acres under each crop enumerated, and the quantity raised as there set forth, would not be found essentially to vary. If I am correct in this assumption, it appears to me that the approximation to accuracy, for all substantial purposes, is at least as great as it would have been, had it been practicable to obtain the average harvest of the crop actually put in. Be this as it may, I took the returns as I found them, and as they were directed to be made, not by the Secretary of State, as is erroneously and somewhat discourteously charged by your correspondent, but by the Legislature; and the averages given were a mere matter of mathematical calculation, which, if inapplicable or inaccurate, could be readily rejected. This portion of the bill, too, was drawn up by a practical farmer of Western New-York, who must have supposed the results to be secured under the arrangement given, of more value for reference than they would be under a different and more obvious classification. And certainly it must be obvious to "J. L. H.," as well as to every reflecting mind, that had the respective marshals, instead of being governed by the plain and perspicuous directions of the law under which they were acting, adopted the suggestions, however "profound" of every individual who felt qualified to offer his advice or "remonstrances" in the premises, these statistics would have been far more "worthless," than they are. Whatever may be their present defects, they are not of such a nature as seriously to mislead any who will give to them a careful and critical examination: whereas such a mixture of truth and error, as must have necessarily resulted from an arbitrary standard to be fixed upon by each marshal, under the "remonstrances" of friends or otherwise, would have been altogether intolerable.

As to the "dairying operations," I admit less reliance

is to be placed upon the average yield per cow as stated; and it would probably have been better to have dispensed with this average altogether, as this is a branch of agricultural operations subject to more than ordinary fluctuation from year to year.

Very respectfully, your obt. servt.

S. S. RANDALL.

ROT IN POTATOES.

.....

In a late excursion to the eastern border of the state, and a portion of Berkshire county, Massachusetts, we paid particular attention to the condition of the potato crop. We found the evidences of the rot very general; the testimony is unanimous, that it is much more prevalent than it has ever been before. We saw but few fields that were not affected; but judging from the appearance of the tops, we should say that the crop was rather less injured on the whole, than it is in the immediate vicinity of this city. A few fields were still green, and so little changed that no symptoms of blight would be observed without particular examination. The crop on wet lands appears to be somewhat more affected than it is on dry land. So far, however, as regards the *first attack*, or the blight of the tops, not so much difference is discoverable; but the actual *rotting* of the tubers is less, as we should naturally expect, on porous and dry soils, than on those which are compact and wet. Dry earth, as well as other dry substances, by absorbing the superabundant moisture of the potato, lessens, of course, the tendency to decay; while moisture, on the other hand, increases this tendency.

Cause and Remedy.—This part of the subject, is, we think, no nearer settlement, than it was a year ago. We have long been convinced that the originating cause is atmospheric—farther than this we can say nothing. In the functions of vegetable and animal life, electricity undoubtedly exercises a potent agency; but whether the defect in this vegetable is owing to any unusual state or condition of this fluid, or to what particular combinations of elements it is attributable, are points yet open for investigation.

But if we are unable to assign the particular cause of the defect, it is some satisfaction to know what is *not* the cause Thus we are confident from the most minute observation, that insects have nothing to do with it. Worms, flies, and beetles, have, to be sure, been found on the stalks and in the hills of rotten potatoes; but this circumstance proves nothing in regard to the thousand cases where no such creatures can be discovered. We have examined, with glasses of ample power, both the top and the tuber, in all stages, from the first period that the defect is discoverable: but no traces of insects are to be found in common cases.

Again, we are satisfied that the idea of the defect being caused by a "want of alkalies in the soil," is an utter fallacy; because numerous instances have come within our knowledge where the application of alkalies has had no effect to lessen the trouble.

And as to remedies, if any have been found, they are certainly such as we have not heard of. Many substances have been recommended as "cures" or preventives; but when subjected to a *thorough* test, they have all, so far as we have learned the result, totally failed. Some have supposed that cutting off the tops would secure the tubers from rotting. We have spoken of this before, though with not much belief in its efficacy. Mr. JABEZ PIERCE, of New-Lebanon, has, however, made some very fair experiments, which show that cutting off the tops is of no advantage whatever. He cut the tops from some rows of potatoes before they were in the least struck by blight; he cut other rows as soon as the leaves began to turn, and others at a later period. In all cases, the rows cut were parallel to others of the same kind which were left uncut. In company with Mr. PIERCE, we carefully examined the potatoes in all the cases referred to. The proportion of rotten tubers was fully as great where the tops were cut, as where they were untouched, provided they were of the same kind. But some kinds were much more rotten than others. Thus the Mercers, (called also in some sections "Neshannocks," and in others, "Chenangoes,") were in the worst condition. We found this to be generally the case, and that the variety called Carters, were next to the former most affected. The flesh-colored potato, (Scotch-greys?) some of the round blue kinds, and the Long-reds, (Merinos) were more sound; and in some instances the last-mentioned kind appeared entirely unaffected, when growing by the side of Mercers that were at least half rotten.

One word more as to the insect theory. We do not believe that any new species has been discovered, or that there is any unusual prevalence among potatoes of any kind before known. To find both the top and bottom of potatoes eaten by various insects, is no new thing; for more than thirty years we have observed them. We cannot here go into a minute description of the different species, nor is it necessary that this should be done. The fact that the ravages of no insect have ever been known to produce such consequences as are now witnessed in potatoes, is sufficient. But it is contended that insects have been found in the affected stalks and in the decomposing tubers. This is not denied, but it no more proves that the insects *caused* this decay, than that the maggots and carrion-beetles in the putrifying carcase of an animal, caused its death!

THE STRAWBERRY,

WITH FIGURES AND DESCRIPTIONS OF FIVE VARIETIES.

.....

THE ease with which every farmer may obtain this delicious and valuable fruit, should induce him to supply himself with all he wants. It is true we are at this month of the year abundantly furnished with peaches, plums, and pears; but the strawberry comes by the first of summer, even as far north as Albany, when nothing else is to be had. Why then should any one let the privilege escape of enjoying a plentiful supply? Now is the time to move in the matter and set out the plants.

Downing speaks of this fruit like a man who knows it well, when he says, "Ripe, blushing strawberries, eaten from the plant, or served with sugar and cream, are certainly Arcadian dainties with a true paradisical flavor, and fortunately they are so easily grown, that the poorest owner of a few feet of ground may have them in abundance."

Very few, comparatively, among the mass of our land owners, have undertaken the culture of the strawberry; and of those who have, many have partially failed from two causes, namely, neglecting good, rich, clean, and thorough cultivation; and neglecting to procure fine and productive varieties. As many bushels of strawberries as of corn, may be raised on an acre, and at an expense not very much greater. If it were not so, the strawberry culturists of Cincinnati could not afford to pour into that city their hundreds of bushels, at a price of three to five cents per quart. One distinguished cultivator there raised at the rate of *five thousand quarts* per acre; and another, who is the most extensively engaged in the business, brought into market *four thousand quarts* in a single day. The fortieth part of an acre would afford a large family a most abundant supply during the strawberry season.

A great deal could be said on the cultivation and management of the strawberry. It may perhaps be sufficient here to state merely, that this plant, to flourish, requires, like most other plants, a good, rich, mellow soil; and like nearly all other plants, the soil for it must be kept clean and well cultivated. Who would expect to see a good crop of corn or of potatoes, from a promiscuous growth of these plants with weeds and grass? Strawberries should be planted in straight rows, about two or two and a quarter feet apart. These rows are as easily kept cultivated by *a horse*, as rows of potatoes or carrots. The runners, as they form, must be treated precisely as weeds, and kept hoed down, or at least should be hoed three or four times a year. With such management success can be scarcely doubted.

Once in three years the runners may be allowed to

fill in between the rows, and the old rows demolished, new ones being thus obtained without planting.

The soil should be kept rich by yearly additions of manure in autumn.

The plants are usually set out in spring, and at the end of summer, or early in autumn.

VARIETIES.—The following are *among* the best. The figures were in all cases taken accurately from specimens of fair size, under ordinary good cultivation; the common error of representing larger than reality being strictly avoided.

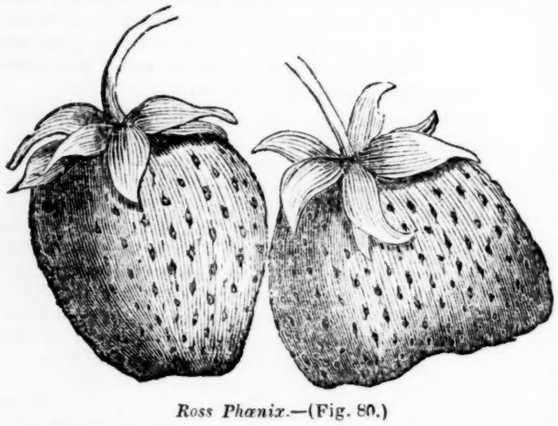
Duke of Kent.—The earliest of all strawberries, and valuable on this account. The fruit is small, being rarely more than three-quarters of an inch in diameter, varying in shape from roundish or round-ovate, to long-ovate with a neck; seeds sunk in cavities with intervals usually sharply ridged. Color, bright scarlet, becoming dark scarlet. Flavor, a clear rich acid, and good. A good bearer. Many judges regard the flavor of this strawberry as equal to that of any other variety, but its *quality* appears to be underrated on account of its *small size*, the latter being the chief drawback on its value, and unfitting it for the market. It ripens the latter part of 5 mo., (May.)

Duke of Kent.—(Fig. 78.)

Large Early Scarlet.—This variety ripens a very few days later than the Duke of Kent, and is about twice its size, and equal in flavor. It is probably the most valuable of all very early strawberries. Fruit round-ovate, sometimes very slightly necked; calyx on the ripe fruit always showing the perfectly formed and adhering stamens; surface slightly irregular, the seeds often deeply sunk in cavities, with sharp projecting intervals. Sometimes the fruit is slightly flattened towards the stem. In thick beds, the color is bright scarlet, but dark scarlet when growing more thinly. Flavor rich and fine, much resembling that of the Duke of Kent, but with the addition of a just perceptible shade of astringency. The flowers are always perfect, and it is an abundant bearer.

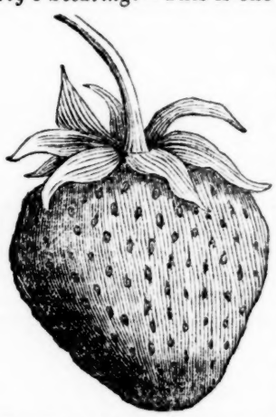
Large Early Scarlet.—(Fig. 79.)

Ross Phœnix.—Its large size, fine flavor, perfect hardiness, and great productiveness, may perhaps entitle this variety to rank as high, if not higher, than any other strawberry of large size for the northern states; though a further and more general trial may be needed. It was raised in 1837, by Alexander Ross, of Hudson, N. Y. Fruit very large; with common culture, four of the berries usually weigh an ounce, and they are about an inch and a quarter in length, and not far from the same in width. Form generally more or less cox-combed or flattened, but not always, varying considerably, and with the surface more or less uneven. Seeds numerous. Color, dark crimson. Flavor and texture very fine for a large variety. It ripens about the middle of 6 mo., (June.)



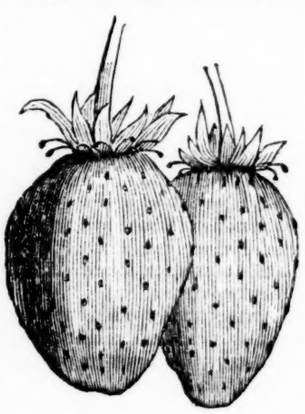
Ross Phœnix.—(Fig. 80.)

Hovey's Seedling.—This is one of the finest of all the large strawberries, and is usually considered as perfectly hardy for the northern states. Several cultivators, however, in Western N. York have had their plants injured or destroyed by winter, especially on moist or heavy soils, when the Early Scarlets and Ross Phœnix have entirely escaped. Hence a covering of straw or evergreens in winter has been found useful, though in most cases they may be unnecessary. Fruit very large, roundish conical, regular in form, sometimes with a very slight neck. Color, dark red. Texture and flavor very fine for a large variety. Ripens about the middle of 6 mo., (June.) The stamens are small and imperfect, and hence it becomes much more productive if planted near some variety with perfect stamens, as the Early Scarlet or Ross Phœnix, or by the occasional intermixture of rows of these productive varieties. It thus becomes an abundant bearer. The fruit, with common good culture, weighs about a quarter of an ounce, and is about an inch and a quarter in diameter.



Hovey's Seedling.—(Fig. 81.)

Prolific Hautbois.—This is considered as the only variety of the Hautbois worth cultivating.—Most persons will probably regard it as inferior to the sorts already named, though some esteem its peculiar, rich, and musky flavor, as much better than that of any other variety. Fruit large, ovate-conical, light purplish red at first, becoming dark purplish red; surface rather regular, seeds projecting. Weight about one-sixth of an ounce. The leaves are of pale green, and of large size, and the whole plant of luxuriant growth. This variety is a great bearer, and ripens about the middle of the sixth month.



Prolific Hautbois.—(Fig. 82.)

STEEPS OF AMMONIA FOR GRAIN.

WE prepared in 1844, a solution of the sulphate of ammonia from the carbonate, according to the directions found in the new series of the Cultivator, vol. 1, page 281.

In the solution we put one bushel of wheat, one-half of which soaked ten hours, and was sown October 5th, and germinated fairly.

In the following spring it had the appearance of being

a little greener than the remainder of the lot, but at harvesting there was no material difference.

The remainder which soaked two days, was put, just before sowing, into a bucket that contained a very little lime, which totally destroyed the germinating powers of the grain.

We saw a piece of wheat near Warren, Pa., in the spring of 1845, the seed of one acre of which had been soaked in a solution of the sulphate of ammonia, and was then more than twice as large and thick as the remainder of the lot.

We soaked a bushel of oats in a solution of a pound of the muriate of ammonia and rain water for forty hours, and sowed on a black muck loam, with hard-pan subsoil, but there was no perceptible difference in the crop, which might be owing to the dry weather.

Some corn soaked in a solution of the same kind, grew with great rapidity. D. H. WRIGHT.

Moscow, N. Y., 1846.

REMEDY FOR SMUT IN WHEAT.

MR. TUCKER—To ascertain the most effective remedy for smut in wheat, we tried the following experiments in 1841:

Ten square rods of sandy loam land we divided into six equal beds. Upon each we sowed three-fourths of a quart of wheat.

No. 1. Sown with smutty grain. Yield, 2¼ quarts. One smut ball to 19 grains.

No. 2. Sown with smutty grain, or rather, a very few balls of smut, the grain being quite clean. Yield, 5¾ quarts clean grain, and a pint of screenings. One smut ball to 168 grains.

No. 3. Smutty grain washed in lime water and brine. Yield, 4¼ qts.; one pint screenings. One smut ball to 176 grains.

No. 4. Smutty grain washed in lime-water and brine, and plastered. Yield, 4 qts. clean grain. One smut ball to 74 grains.

No. 5. Smutty grain washed in lime-water and brine, and limed. Yield, 7 qts. clean—one gill screenings. One smut ball to 1120 grains.

No. 6. Smutty grain washed in lime water, brine, and ley, and ashed. Yield, 7 qts. clean, one pint screenings. One smut ball to 840 grains, and the largest growth of straw.

Soaking wheat in brine and liming it before sowing, we have found to be as good a preventive against smut as any which we have used. D. H. W.

NAMES OF FRUITS.

MR. TUCKER—Having been but a few years engaged in the study of horticulture, no one point has struck me as more deserving attention and censure, than the practice of disseminating fruits as new and distinct, before they have been fruited and carefully compared with varieties already known. To this point my attention has been more particularly drawn from seeing advertisements of a strawberry under the name of "Willey," passing around the country. This variety, it is stated in these advertisements, is entirely "new and fine, great bearer," &c.; and a price for the vines is placed in accordance with its supposed value.

In order to correct the error relative to this variety being "new and distinct," permit me to give its history, and then the variety to which I judge it to belong.

Some eight or ten years since, a lady from this city, who pays great attention to procuring new varieties of fruits and flowers, was in New-York, and visiting a nurseryman's garden, purchased among other things two varieties of strawberries which he represented as of great value. These were brought to this city, planted out, grew, and fruited, but by some accident the names of the varieties got lost. After the vines had made runners, this lady gave some of each to Mrs. Willey, of this city, and by the latter lady they were generally distributed. As time progressed, and the fruit came into market, some amateur cultivators here, pronounced one variety to be the "Methven Scarlet," but having few varieties with which to compare, they were unable to determine the true name of the other, and therefore, out of compliment, they named it the "Willey." Under this name the vines have been distributed far and wide, to Cincinnati, into Kentucky, where it has been advertised as a *new* variety, and also to Boston, where I observe, it is brought forward by a nurseryman there, as something new. At this latter I am the more surprised, as this nurseryman is a member of the Horticultural Society there, and I had supposed the society would have examined carefully this, as they should all new named fruits, and corrected the error in early season.

In fruiting this variety with the "Hudson," cultivated at Cincinnati, and described by Mr. Longworth, I can see no difference; but it is not the "Hudson" of Mr. Downing.

The variety "Methven Scarlet," has been disseminated from this section under the name of "Keene's Seedling," "Downton," and of "Stafford's Mammoth." It is a variety which, once to see, is always to know; yet it may come into cultivator's hands, under the latter name as something new, and ere it has fruited and been examined as it seems requisite, may be offered for sale. E.

Cleveland, O., August, 1846.

SINGULAR FRUIT.

MR. EDITOR—I saw a few days since, a very remarkable kind of fruit growing in the garden of Daniel Payne, Esq., near Warrenton, Virginia, to which I would be glad to call your attention.

The appearance and taste of the fruit put me entirely at fault as to its nomenclature. It resembles in form and size the English plum. Its color is a pale yellow; its taste partakes of the purple plum and May cherry. In some of the fruit—all taken from the same branch of the tree—the taste of the cherry predominates, in others that of the plum,—giving it a rare and delicious flavor. The stone is very much like that of the cherry, but rather more oval.

It is clearly a hybrid fruit of the most anomalous sort. The trees on which it grows are unlike any I have ever seen, with thorns like the damson, and leaves like the peach tree or wild cherry. These trees grew from the seed (carefully planted,) of the large Flanders cherry,—itself a peculiar fruit, and much the finest species of cherry known. They are about five years old, and have borne for two seasons past, though not abundantly.

Being an indifferent horticulturist, I have ventured to send you a description of this remarkable fruit, hoping you may know more about it, and that you can assign to it a "local habitation and a name." My own theory in regard to it is, that the flower of the Flanders cherry tree became *impregnated* by the pollen of a neighboring plum tree. I can account in no other way for so nondescript an offspring from the Flanders cherry.

Yours, &c., P.

Warrenton, Va., July 18th, 1846.

SEEDING WITH CLOVER.

It may not be known to all farmers, who raise their own clover seed, that the straw, after threshing, contains enough seed to give a thick seeding to the land, if spread over the surface. Dr. Cook, of Sodus Point, N. Y., pursues this practice very successfully. He spreads a thin coat of the straw over the ground as soon as it is harrowed, which does not injure, but rather benefits the grain, as it comes up through the straw, which afterwards decays. The seed vegetates well, and affords a very thick growth of clover, or to use the Doctor's own words, "as thick as the hair on a dog's back."

THE GIFFORD MORGAN HORSE.—(Fig. 83.)

.....

OF this noted horse we give the following desription (which we have no doubt is entitled to confidence,) in the language of the owner.

.....

The Gifford Morgan, of which the above figure, taken from a daguerreotype miniature, is, in general, an accurate representation, is of a bright chestnut color, fourteen hands and three inches high, weighs about 1000 lbs., and in his form and qualities, is said by those who have been well acquainted with both, more nearly to resemble the original Justin Morgan horse than any other horse they have known. His gait is short and quick, he has great nerve and action, and is full of courage and endurance. His style of motion is very much admired. As a road horse he is not excelled, and is regarded as the best saddle horse of the Morgan family. He is remarkable for the great uniformity with which he stamps upon his stock, and through them upon their descendants, the fine, peculiar qualities of the Morgan race. The patronage he receives from intelligent breeders is as full as is desired, and all who see him freely acknowledge his great merits.

Among the celebrated foals of this horse, can be named the well known trotting pony of Horatio Sargeant, of Springfield, Mass., sold to Mr. Wood, of Providence, for $1,000, making time, a mile, in 2m. 30s. The chestnut horse of Robert Abel, of Pawtucket, R. I., going in 2m. 40s., and was sold for $600. The noted Beppo, making time on the Centreville track, 2m. 32½s. Many of his foals are yearly purchased for the southern market, as far south as New-Orleans, and some have even been taken to England.

The sire of the Gifford Morgan was the Woodbury, or Burbank Morgan, and his grandsire the Old Justin Morgan horse, whose pedigree is given in the last January number of the Cultivator. The sire of his dam was got by the old Justin Morgan, as also was his great grand dam. The Gifford Morgan has, therefore, seven sixteenths of Morgan blood, while no Morgan horse (except the old Justin Morgan himself,) has ever been more than half blood.

I intend to exhibit the Gifford Morgan at the show and fair of the State Agricultural Society, at Auburn, in September next, accompanied by a six years old stallion of his stock, closely resembling him, and a very perfect animal. The latter is for sale, but the Gifford Morgan is not. FREDERICK A. WIER.

Walpole, N. H., Aug. 10, 1846.

Dig wells in autumn, while the springs are low, and you will be less likely to want for water.

IMPROVED HUSBANDRY.

.....

MR. EDITOR—I read with very great profit and pleasure, your notice of the successful farming of A. Van Bergen, Esq., and especially that part of it which related to his "*land under cultivation.*"

Agriculture, for its future advances, must be largely indebted to the same inventive genius by which the industrial results of manufactures have been so immensely increased. As the wheel has given place to the spinning jenny, so must the hand hoe be supplanted by the improved plow, the cultivator, and the spring-toothed horse-rake. When we say that "spade labor is the perfection of husbandry," we should be understood to mean that the results produced by the spade are in themselves perfect, while the instrument itself, as the means of producing those results, must be confessed to be primitive and rude. The true perfection will be the production of the same high tilth by labor-saving machines, and a consequent freeing of farmers, in a great degree, from that dependance upon servants, the expense and vexation of which constitute the most annoying feature in their occupation.

When Mr. Van Bergen, by the aid of his improved implements, cultivates forty acres of corn in the best manner, with the labor of a man and boy, he has made a large stride in practical husbandry which many of his brother farmers would like to follow him in. To enable them to do so, they must rely upon you to give them a descriptive account, with suitable cuts, of his implements, and of the manner of using them. Will you not assist them? GEORGE W. DOBBIN.

Elk Ridge Landing, Md., Aug. 12th, 1846.

.....

NOTE.—We have before stated that we shall endeavor to give cuts of some of the implements referred to as soon as practicable.—ED.

MOTHS.—Mr. BAKER, in a lecture on insects, lately delivered before the London Farmer's Club, stated that the ravages of the common woolen moth may be entirely prevented in the following manner. He said—"You have nothing to do but to place shallow boxes in your drawers, with a little spirit of turpentine in them; and as the turpentine evaporates and penetrates the cloth, the larvæ will protrude, and be found dead on the surface."

TURNEP-FLY, (*or Flea.*)—In the same lecture from which the above is taken, Mr. BAKER spoke of the turnep-fly. He thought the only mode of effectually combatting these insects, is to make the land so good that the turneps will grow so fast as to render it difficult for the flies to accomplish their purpose. It is with them as with us: If dinner were provided for twelve, and twenty-four came to partake of it, there would not be much left; but if, on the other hand, dinner were provided for twelve, and only six came, there would be plenty left. It is the wisest way to sow a large quantity of seed in alternate rows, at different times. For as these insects appear to like the youngest best, you may thus save one row at the expense of another. We have known a crop of Swedish turneps, (ruta baga,) saved by sowing the seed of the common white flat turnep with it. The white turnep starts first and its leaves are tender and sure to be preferred by the insect, which therefore permits the ruta-baga to grow unmolested. Mr. B. recommended strewing common road-dust on the plants when they are wet with dew, to keep off the fly, and says it is found that they will not touch any of the plants on which the dust has fallen. We have used with good success, plaster of paris for the same purpose, and also ashes; but there is danger that the latter may be too strong for the plants. He thinks the same object may also be accomplished to a great extent by hoeing, as that operation scatters dust more or less on the leaves, and those which get most dirty are most sure to escape.

FARMING AMONG THE HILLS.

In the early part of last month, we made a short excursion among the farmers of New Lebanon and vicinity. Our first stop was with Mr. M. Y. TILDEN, to whose kind attentions, and those of Mr. BENJ. A. HALL, we are indebted for an introduction to several of the good farmers of New-Lebanon, Stephentown, &c. We give the following brief notes of the principal objects which attracted our attention.

WOOL GROWING.—This is carried on to considerable extent in this section. On the farm of Mr. TILDEN, and brothers, there is a flock of 1,300, mostly of Saxon blood. We saw the fleeces of this years' clip, which are not yet sold. They are generally of fine quality, and are put up in very good order, being well cleansed, and of almost snowy whiteness. The average weight this season, was 2 lbs. 12 oz. per fleece. The largest fleece was that of a buck—6 lbs. The best buck, however, is a three-year-old one, bred by Mr. C. B. Smith, of Torrigford, Ct., the fleece of which weighed 5¾ lbs. He is a beautiful buck, and his wool is excellent, being fine, of good length, handsomely curved, white, and of very uniform quality over the whole body.

Messrs. TILDEN have about 800 acres of land; 300 acres comprise the home farm, and the remainder is wood, and mountain pastures.

The farm is managed chiefly by a tenant, Mr. NELSON TANNER, who is also a joint owner in the sheep and other stock. Wool is considered the staple product, and no more stock of any other kind than sheep, is kept than is necessary to manage the farm; at present there are kept 5 horses, 4 oxen, 6 cows, and 3 young cattle. The produce of hay is from 200 to 250 tons, annually.

Mr. TILDEN'S barn is sufficiently large to hold all this hay, and at the same time affords ample shelter to all his sheep and other stock. It is our intention to give a more particular description of it next month.

In company with Mr. TILDEN, we visited the mountain on which are his principal summer ranges for sheep. It is an elevation of some 1600 feet above tide water; presenting a rocky surface, and rather thin, moist soil, but producing a tolerable quantity of very sweet and nutritive herbage. It appears to be, on the whole, well adapted to sheep, and they are generally healthy here. The heat is never intense, and the air is very salubrious. We were on the summit at 11 A. M., and while the people in the valley were sweltering with heat,—the day, (7th Aug.,) being one of the hottest of the season—we found ourselves most comfortable under closely buttoned coats. But the purity and bracing tendency of the air, was most delightful, and with a landscape view of surpassing beauty and great extent, amply compensated us for the toilsome ascent.

MR. C. W. HULL, of New-Lebanon, has a flock of about 300 choice fine-wooled sheep. He has been considerably noted as a breeder of fine sheep for several years. In 1844, he received the first premium on Saxon bucks, at the N. Y. State Ag. Society's Show, at Poughkeepsie. His sheep are of small size, but of very uniform character, and show that very close attention to the quality of their wool, has been bestowed in breeding. We did not see his wool—it is at the Wool Depot, at Kinderhook; we believe it has heretofore sold for about 60 cents per lb. His fleeces are, however, light, averaging this season but 2 lbs. 9 oz. We would suggest to Mr HULL the propriety of endeavoring to increase the weight of his fleeces without losing fineness. We are perfectly satisfied that this is feasible. We think three pounds per fleece is readily attainable, without the least deterioration of quality. Mr. H. has no bucks which are more than a year old last spring. They are too young for their quality to be judged of with confidence—especially just after having been shorn; but some of them appear to be excellent, both as to quality of wool and shape of carcass.

DAIRYING.—An example of very profitable dairy management was shown us on the farm of Mr. HALL, (whose name we have above mentioned.) Mr. H. has a farm of about 200 acres—mostly hill-land, but moist, and affording good pasturage. He keeps 24 cows, (or rather has that number in milk—we think he has some *dry* cows.) He makes butter, which is sent regularly to Boston twice a week. He has an established customer for it in that city, who takes the whole, and allows such a price as the quality and the state of the market will justify. The average this year has been twenty cents per lb. It is put down in firkins, which hold 20 to 25 lbs. each. The firkins are made of well seasoned spruce, clear of sap, firmly put together, and neatly turned, in the manner of what are called the Shaker pails. They are altogether a neat article. They are obtained in Boston, and as we understood, are manufactured in Maine.

Ground rock-salt is used at the rate of about one oz of salt to one pound of butter. This kind of salt is considered better than any other, and far preferable to the western salt. If the butter is designed for long-keeping, a small quantity of loaf-sugar, (say half an ounce to the pound of butter,) is added to the salt and worked in. No saltpetre is now used at any time—former practice having demonstrated its uselessness, if, indeed, it did not actually injure the butter.

The cream is churned while it is sweet, or at farthest before anything more than a very *slight* fermentation occurs. Great care is taken to extract the buttermilk, and for this purpose the butter is thoroughly worked with a brake, of somewhat similar construction to the ones described in our June and August numbers. The cream and the butter are kept in a refrigerator.

In connection with the dairy, Mr. HALL keeps swine to good advantage. They are fed with the skimmed milk, with some vegetables, peas, and a little grain at the last period of fattening. They are kept wholly in pens, with small yards attached, for the purpose of making manure. He sold last year over $300 dollars worth of pork. This year he has adopted a different course which will prove more profitable. He sends off his pigs via railroad to Boston, when they will weigh from 50 to 75 lbs. each, dressed, and gets for them at Brighton, eight cents per pound, dead weight. This is the course except with a few grown hogs, which are designed to make pork for home consumption.

Mr. HALL'S cows are evidently good milkers. They are mostly of the common breed of the country, but have been *selected*. Several have a dash of the Durham blood in them, and one is a full-blood, from Connecticut. The whole lot, including several heifers only two years old, averaged 8 pounds and a fraction per week, in June last, on grass feed only. Mr. H. is confident that they will this year reach an average of nearly 200 lbs. to each cow.

We should have mentioned in the proper connection, that the churning is done by horse-power—from 60 to 75 pounds being churned at once. The churn used is on the model of Galt's, and the power is a horizontal wheel, on which the horse stands.

The winter food for the cows is chiefly hay; though it has heretofore been Mr. HALL'S practice to give them some potatoes towards spring. He prefers the potato to any other root, but since it has been so much injured by the rot, the carrot has been resorted to as a substitute. It seems to be the general impression that the carrot is the best root to take the place of the potato in feeding stock; in this we also concur, and are gratified to see the culture of this vegetable extended.

We shall continue our notices in future numbers.

STATISTICS—BEANS.

MR. EDITOR—In the statistics of the Agriculture of your state, recently published, of the article BEANS, it is reported that in two or three cases, *over one hundred bushels have been raised from an acre*. Several of the readers of my paper have expressed to me their doubts as to the correctness of these figures; and if correct, they are very desirous of obtaining further information on the subject—as to the kind of beans, quality of the soil, mode of cultivation, &c. Perhaps if you would ask for this information through the Cultivator, it would be furnished.

M. B. BATEHAM,

Columbus, Aug. 8, 1846. *Ed. O. Cultivator.*

THE POTATO ROT.

.....

MR. TUCKER—We regret to say, though the general features of the season have almost given us the assurance that such would be the case, that this disease has again, thus early in the season, made its appearance. When a calamity of such general consequences, falling as it does upon every class of citizens, though perhaps most severely upon the poor, is spreading its fearful ravages abroad, it surely presents a worthy subject for the investigation of the curious and observing,—while at the same time, caution should be used not to mislead the public by offering them mere conjectures and vague theories, which cannot stand even the test of hasty investigation. We make these remarks, knowing that from the very nature of the case, and the general predisposition of the mind to originate *something new*, that many opinions in regard to the matter will be originated, and that every paper will be filled with suppositions often hastily originated, and as vain as they may be premature.

As facts in the case are what we wish for, in order to be able to render just and true judgment, and come at conclusive causes and remedies, we would suggest that all writers on this subject, and there is no doubt but there will be a host of them, should be specific in their remarks, and so far as circumstances will permit, answer the following queries, viz:

What has been the general state of the weather as it respects evenness of temperature, and wet and dry? Have there been many showers, followed by immediate and scorching sunshine? At what time did you notice the first operation of the rot this season? What was the soil in which it first discovered itself—the location as respects streams, and low, foggy lands, and its exposure to atmospheric influences, especially the north? What kinds of manures were used, and how were they applied? What substances were employed at planting, and other times, to prevent the rot, and what was the effect? What kinds were earliest, and most affected,—and did those early or late planted suffer most? What was the progress, as regards soil, &c., of the disease from when you first discovered it until its ravages ceased? What preventives were tried after it made its appearance, and with what success?

It appears to us, that by bringing facts which the above suggestions are calculated to draw out, before the public, much light may be gained on this subject, on which so many contradictory theories are now afloat, and we believe, in good faith, that light will come, and with such influence that it will enable us to counteract this sad disease. The mooted supposition that insects are the cause of it, we think may be safely abandoned, for we have already examined one or two fields where the rot was doing a sad work, and where the vines exhibited less of the labors of insects than they did at harvest time last year, when we had no rot.

Richmond, Mass., Aug., 1846. W. BACON.

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[We have received of Dr. I. WARD, of this city, the following detail of facts in reference to the POTATO ROT, as exhibited on his farm, situated in the easterly part of New-Jersey.]

Last season I planted the common or Philadelphia Mercer, and the *Maine* Mercer potato, the former on dry, the latter on low land; both were planted late; the *Maine* Mercer on the low land suffered severely from the rot, while the other escaped.

This spring, I used for seed the common Mercer, which escaped altogether the rot of the last season. Contiguous to them, side by side, I planted *Hall's Early Junes*, a very prolific and early kind. I found, upon examining a number of hills in adjoining rows, the Mercer so much affected as to diminish the crop at least one-third, while the Early Junes had entirely escaped the blight. On the other side of the same field, the land being equally dry and elevated, I planted the Pink-eyes, which I found had suffered somewhat; here and there a potato gave evidence of the disease.

I ought to remark, that on the first of August, the time of my observations, the vines of the Early Junes were dead, the potatoes having *ripened* many days previous, while the vines of the Mercer and Pink-eye were beginning to decay.

On another field, where the *Maine* Mercer suffered from the blight the previous year, I planted Hall's Early June, the Carter, Pink-eyes, and Scotch Greys; but as this crop was later by three weeks than the other, I cannot confidently predict their escaping the rot; but as yet I could discover no evidence of its existence; possibly I should also except the Early June, as the vines on this field were also drying up, the potatoes appearing ripe and sound.

The late crop, which has not up to this time, the 8th of August, exhibited any evidence of the disease, I manured with muck and lime, in the proportion of 8 parts of muck to one of lime. A part of the early crop, which suffered from the rot, was manured with muck and lime, the other part with muck composted with yard manure. On the portion where muck and lime was used, the blight was not as destructive as where muck and yard manure was used; so marked was the difference, that I am constrained to regard the action of the muck and lime as a preservative, if not a preventive of the disease, and have determined to use double the quantity of lime in preparing my muck for future crops.

On three farms, similar in the character of the soil, and contiguous to mine, and the only ones respecting which I obtained definite information as to the extent of the rot, the crops suffered far more than mine, especially the Mercer. How far the blight in my field was controlled by the character of the manures, I have no means of determining.

The Mercer has long been known to be a feeble variety of the potato, possessing so little strength of character, as to require a combination of favorable circumstances to ensure a crop.

The conclusion to which I have arrived in the review of these facts, is that the Mercer, from the feebleness of constitution, is particularly exposed to the ravages of this disease, and whether it be on account of its deterioration from successive propagation, or from its inherent constitutional weakness, should no longer enjoy the confidence of the farmer; and secondly, that while this predisposition to the disease was not destroyed, it was strongly resisted by the character of the manure used in cultivation.

DOMESTICATION OF THE BUFFALO.

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MR. TUCKER.—In the Cultivator for July, Mr. Jennison inquires whether any attempts have been made in Missouri, or other parts of the United States, to domesticate the Buffalo, and with what success?

Attempts have been made in Missouri and on the banks of the Arkansas, by several gentlemen, at different times. The success "in domesticating" the animal was complete. But the next and most important question is, are Buffaloes worth domesticating? They have been mixed with our common cattle—the cows have been milked, and the bulls have been made to draw the plow. But neither species was improved by intermixture. The cows give rich milk, but very little of it. The oxen have great strength in their fore parts, but are not to be compared with our common oxen in endurance. Their main strength seems to lie in their heads, necks and shoulders, but they taper off behind in strength as well as form, and soon break down when worked. They are impatient of all vexation, and are rather unmanageable when goaded. Owing to the strength of their horns and fore parts, they break over fences with facility, and in this respect are mischievous. Take them when calves, and they are easily domesticated, and may be seen in different parts of the State, as I have seen them, herding with the common cattle. The hind quarters, ribs, humps and tongues of the cows are

esteemed good eating. But few, I imagine, would be willing to exchange forever, beef for Buffalo meat. It is usual, each year, for some of our butchers to fatten a few buffaloes and expose their meat for sale in market at Christmas, when it is sought by some as a rarity. The best pieces, and the hump is the best, sell then for 25 cts. per pound.

The Buffalo is chiefly valuable for his skin, which dressed, sells for from $1,25 to $5, according to quality. He is hunted and killed for the skin alone, in very many instances. The number of buffalo robes brought into this city from the west is about 60,000 per annum. The number has been as high as 100,000 in a single year, but the receipts are diminishing. The animal was formerly very abundant on the banks of the Mississippi, but at present he is not found, in the wild state, within less than 200 miles of our western boundary. Great numbers of the animal are destroyed every year by Indians and hunters, and the species must, before many years, be exterminated. Expeditions are every year fitted out from this city, to hunt the buffalo for amusement. Two young sprigs of the nobility of Scotland, are at this moment in this city for the purpose of embarking in an expedition of this kind. A three months expedition of this sort, fitted out with five voyageurs, a guide and a hunter, with the requisite means of transportation and provision, costs not far from $2,000.

The experiments tried in domesticating the buffalo, have led to the conclusion that the animal is not worth domesticating, unless it be for curiosity.

THE SEASON AND CROPS.—Our haying and harvesting are over, and we have had excellent crops. My timothy crop this year has equalled about 3 tons to the acre. The crop of fruit of all kinds is a fair one. The early part of the season was as favorable as could be wished. Lately, however, we have been suffering from drought and extreme heat. The thermometer averaged during day time 95 degrees in the shade, for the week before last. The corn and potato crops will be seriously injured by drought unless we soon have rain. During the last few days, we have experienced one of those sudden changes so characteristic of this climate. A cold north wind has been blowing, the thermometer down to 60 degrees, and woolen clothes have been comfortable during the day and blankets by night. An unusual degree of sickness prevails, chiefly intermittent fevers, and disorders of the bowels.

Agricultural products are abundant and extremely low. The quantity exported from this city this year exceeds the amount of any previous year, and is nearly double that of 1845—in many articles more than double. This valley will be able to supply the world. But to get easily to market, we want the Mississippi cleared of snags, and a rail road from this city to Lake Erie.

THO. ALLEN.

Crystal Springs, St. Louis, Mo., July 20, 1846.

AGRICULTURAL EXHIBITIONS.

N. Y. STATE AGRICULTURAL SOCIETY.—Annual exhibition to be held at Auburn, Sept. 16th and 17th.

AMERICAN INSTITUTE, New-York—Horticultural exhibition to open on the 6th of October—Plowing and Spading Matches on the 9th—Cattle-show on the 14th and 15th of October.

ONONDAGA CO.—Fair to be held at Syracuse, Oct. 1st and 2d.

ALLEGANY CO.—We have received the premium list of this society, and among the prizes offered, we notice thirty vols. of "The Cultivator." The time and place of holding the Fair is not stated.

FAIRFIELD CO. (Ct).—Annual exhibition at Bridgeport, Oct. 14th and 15th.

COLUMBIA CO.—Fair at Hudson, Oct. 6th.

OTSEGO CO.—Fair to be held at Cooperstown, Oct. 1st and 2d.

SENECA CO.—Annual exhibition to be held at Waterloo, Oct. 22d and 23d.

MONROE CO.—At Rochester, Oct. 15 and 16

LEWIS CO.—At Lowville, Sept. 23 and 24.

THE CULTIVATOR.

ALBANY, SEPTEMBER, 1846

TO CORRESPONDENTS.

COMMUNICATIONS have been received, since our last, from Perkins & Brown, N. Longworth, L. B. E., C. N. Bement, Stephen Culver, S. S. Randall, W. Bacon, V. W., S. Tillotson, A. J. Moseley, Thos. Allen, J. Shillaber, B. M., G. W. Dobbin, F. A. Wier, Z. C. Robbins, Frock and Trowsers.

BOOKS, PAMPHLETS, &c., have been received as follows:

Incentives to the Cultivation of the Science of Geology, designed for the use of the young. By S. S. RANDALL, Dep. Supt. of Common Schools of the state of New-York. Greeley and M'Elrath, New-York, publishers—190 pp. duodecimo. From the Author, and from the publishers.

The Cultivation of American Grape Vines, and Making of Wine. By ALDEN SPOONER, Brooklyn. A. Spooner & Co, publishers. From the Author.

Daily Cayuga Tocsin; from Maj. J. B. DILL.

Speech of Hon. J. A. SEDDON, of Va., on the Tariff, delivered in the Ho. of Rep., June 29. From the Author.

Remarks on the Culture of the Grape, &c., in the Western States. By MELSER FLAGG, M. D., Cincinnati.

Premium List of the Ag. and Hort. Department of the American Institute, for 1846.

Constitution, By-Laws, &c., of the Buffalo Hort. Society.

Reports of the officers of the Maine Insane Hospital. From Dr. James Bates Superintendant.

Speech of the Hon. Truman Smith, of Connecticut, in opposition to the Warehouse-bill, delivered in Ho. of Rep., July, 31, 1846.

MONTHLY NOTICES.

STATE CATTLE SHOW.—Those who intend to exhibit stock at the show at Auburn, would do well to notify IRA HOPKINS, of that place, as soon as practicable, stating the number and kind of animals to be sent; and on their arrival, Mr. H. will be prepared to inform the persons having charge of them, where the animals may find suitable accommodations.

Those wanting provender will notify CHS. RICHARDSON, of Auburn, stating the kind, quantity, &c., that is wished.

FRUIT.—We have received some very fine specimens of the Magnum Bonum plum, from the garden of Prof. HALL; also some good samples of the Julienne pear and Holland plum, from Mr. E. DORR.

AMERICAN INSTITUTE.—The *nineteenth* Annual Fair of this Association will be opened at NIBLO'S GARDEN, in the city of New-York, on the *sixth* day of October next. The Show of cattle and other animals will take place at the corner of Twenty-third st. and Fifth Avenue, on the 14th and 15th days of October; and the Plowing and Spading matches on the 9th of that month. Numerous and liberal premiums are offered in all departments of horticulture and floriculture, and also for the most profitable farms and gardens. The list of premiums for stock, embraces Native, Durham, Hereford, Devon, Ayrshire, and Alderney cattle, besides fat cattle and working oxen; Saxon, Spanish, Long-wooled, and Middle-wooled sheep, and Alpacas; Thorough-bred and other horses; Mules and Jacks; Swine, and Poultry. No entrance money for stock will be required, and feed will be prepared for those who wish to purchase, at the cheapest rate. Entrances of stock must be made in writing at the Committee Room by the 12th of October, or they may be previously sent to T. B.

WAKEMAN, Corresponding Secretary. Animals which have before received the premiums of the Institute, are now, by a change of rule, allowed to compete without special reservation.

STOCKS FOR PEARS.—Mr. B. MACOMBER, of Grand Isle, Vt., gives us his mode of engrafting the pear on apple stocks. He says—"As I am without pear stocks, in cultivating pears I remove the dirt from a small apple tree; one from half an inch to an inch in diameter is about the right size: cut it off below the surface of the ground and insert a pear scion in the usual method of grafting; leaving four or five buds on the scion, from which there will start as many limbs, which after they have arrived at suitable size, (except the main shoot) I bend down as layers and let them take root."

HOUSES OF UNBURNED CLAY.—Will some of our Canada correspondents, or others, give us an article on the best mode of building on this plan? stating all the important details, as far as practicable, and particularly whether the weather in winter or at any other season affects the outside so as to do injury.

CROPS IN ILLINOIS.—J. SHILLABER, Esq., of Dixon, writes under date of July 15th, that the wheat crop is much injured by rust. Corn, barley, oats and potatoes were promising.

COTTON CULTURE.—In regard to the suggestion of our correspondent J. G. C., at St. Joseph, La., we can only say we should be pleased to receive articles on the culture of cotton from those engaged in the business. If anything can be given in addition to the excellent articles furnished by Dr. CLOUD, (see vols. for 1843 and '44,) we should be glad to give it to the public.

Those in want of MERINO SHEEP are referred to the advertisement of Mr. BURRITT, in this number. We presume Mr. B.'s statements in regard to the produce of his flock are entitled to credit. His buck "Major" we saw at the Utica show, and thought him a good animal—large-bodied and well-formed, with clean, white wool, of considerably finer staple than many of the "large shearers" of which we hear.

POTATO ROT.—The latest intelligence from the potato-fields, is, that the rot is not increasing, and that in those cases where the tops were only partially killed by the blight, which, during the early part of August, spread with such rapidity, they seem to be rather recovering from the effects of the attack. We hope, therefore, that the disease for this season has reached its crisis, and that no new cases will occur. We have heard several complaints within a few days, that the *carrot* crop is in some instances affected by a blight in a similar manner to that of potatoes, and that the root itself is not unfrequently found in a decayed condition. How far has this been noticed?

CROPS IN SOUTH CAROLINA—Extract from a letter received from A. G. SUMMER, Esq., dated Columbia, S. C., July 31, '46:—"Our crops look promising this season. Of small grain there has been a most abundant crop, though much of our wheat is injured by rain—having sprouted before it could be cut. I made from three bushels of Harmon's Improved Flint wheat, bought in New-York, *one hundred and three bushels*, and it grew on a fraction less than three acres of land. My oat crop was heavy; and from the two-rowed variety of barley (northern seed,) I made a fine crop. I have however, to record my experience against northern rye seed, as I sowed twenty bushels of it the last season, and it did not send up a dozen stalks in the whole field."

IMPORTATION OF DURHAM COWS.—The packet ship New-York, Capt. CROPPER, which arrived at New-York city on the 10th July last, brought a Durham cow, called *Hilpa*, for GEO. VAIL, Esq., of Troy. This cow, together with another one, called *Cecilia*, which will soon follow, was purchased in England for Mr. VAIL, by THOMAS BATES, Esq., of Kirkleavington, Yorkshire. The following are the pedigrees of these cows, as certified by Mr. BATES:

Pedigrees of two Short-Horn Durham Cows purchased by Thomas Bates, of Yorkshire, England, for George Vail, of Troy, state of New-York, of the Messrs. Bells.

Mr. Thomas Bell's cow Hilpa,—roan color, calved May 23d, 1840; got by Cleveland Lad, (3407;) dam, Hawkey, by Red Rose bull, (2493.) Grand dam (Hart) by Rex, (1375;) g. g. dam bred by Mr. Richardson, of Hart, Durham Co., who had the breed above 30 years, and were all roan color, and good milkers.

Mr. Robert Bell's cow Cecilia, red and white; calved Oct. 6, 1841; got by 3d Duke of Northumberland, (3647;) dam by Short tail, (2621;) grand dam (Chapman,) by Skepton Bridge bull, (5208,) and from a tribe of cows all good milkers, and long in the possession of the breeder thereof. The son of the above cow, Hilpa, by Duke of Northumberland, (1940,) when a calf, in 1844, obtained the highest premium of the Yorkshire Co. Ag. So. The same autumn, obtained the highest premium at the Durham Co. Ag. Society, at Stockton, and on the following day he was also awarded the highest premium given by the Cleveland Agricultural Society. Hilpa was bulled before she left England by the prize bull Walton.

The cow HILPA is an animal of fine points. She has the appearance of a good cow for the dairy, and is besides what graziers would call a "nice handler."

☞ Among our advertisements will be found that of Mr. GEO. B. CHASE, for the sale of his farm. The Auburn *Advertiser* says, that considering the quality of the land, the stone quarry, and the numerous facilities afforded by the location, it is one of the most desirable in that region.

SHEEP RANGES.—We would call the attention of those desirous of purchasing tracts of land for the purpose of keeping sheep, to the advertisement of Messrs. WILSON of Virginia. We know nothing of the tract which they offer for sale, except what may be learned from their statement; but it strikes us it would be an object to make thorough inquiries respecting it.

☞ The farm offered for sale by ROGER S. MOORE, (see advertisement in this number) we have no doubt is one of the most desirable to be had in the country—whether considered in relation to its advantages for profitable farming, or for its attractions as a country residence for professional or mercantile gentlemen. For particulars in reference to it, inquire at this office.

TO GROWERS OF BARLEY.—The principal brewers of New-York, Philadelphia, Boston, Baltimore, Washington, Albany, Troy, Poughkeepsie, Newburgh, Hudson, and Providence, have issued a circular, in which they state that they have for many years past suffered very severely on account of the barley having been brought to market in a bad condition, which it is said, is "owing in a great degree to the haste of the farmers, who in many instances have it threshed in the field or barn before it has undergone the sweating operation, which requires it to lay in the straw at least twenty or thirty days after it has been gathered, and which is absolutely necessary to make it a good, wholesome, vegetating grain." They state that they "have also reason to complain of some of the threshing machines now in use, that break a great portion of the grain, thereby rendering it unfit for malting, and which, by coming in contact with the good grain during the process, makes it utterly impossible to produce a good article of malt." For these reasons they have determined not to purchase barley from persons who pursue the above course, and they desire those engaged in the growth of the article, to guard as much as possible against practices that are operating seriously against themselves and the brewers.

SINGULAR.—A correspondent at Shiawassee, Michigan, informs us that he lately found *nine* full grown eggs in a common hen, which was dressed for domestic use. We should think this hen's organ of *philoprogenitiveness* must have been very small, or she would have preferred to "increase and multiply," rather than to hoard up such a stock to no purpose.

SALE OF WOOL.—A letter received from Messrs. PERKINS & BROWN, dated Springfield, Mass., July 28, '46, informs us that they had just sold an entire clip of about 2,300 lbs. of wool for sixty-nine cents per lb., including in each fleece the whole of the worst locks ever shorn from sheep. "This, it is said, "was the average, absolutely, in cash;" and it is added that "the grower was to receive one cent per pound more, pro-

vided the new tariff-bill should not pass." This flock, it is said, averaged, old and young, a little over $1.60 per head. It will be recollected that Messrs. P. & B. have a wool depot at Springfield, where wool is sorted and sold for the various kinds of manufactures.

CONNECTION OF SCIENCE WITH AGRICULTURE.—We learn that at a late meeting of the Corporation of Yale College, two new professorships were established. One is that of Agriculture and Animal and Vegetable Physiology, founded on a donation of $5,000 from JOHN T. NORTON, Esq., of Farmington, Ct., to promote the study of Agricultural Chemistry. The son of the donor, Mr. JOHN PITKIN NORTON, whose valuable communicatons to our pages for the last two years will be recollected by our readers, has been appointed to the professorship. The other new professorship is that of Practical Chemistry, or Chemistry as applied to the Arts, to which Mr. B. SILLIMAN, Jr., has been appointed.

SALE OF DURHAM CATTLE.—A herd of Durham cattle, belonging to GEORGE RENICK, Esq., of Chilicothe, Ohio, were sold at public auction on the 29th of July, last, and as we learn from the *Ohio Cultivator*, brought the following prices.:

Cows.		Heifers three y'rs old.	
Donna Maria,	$95	Bloom,	$45
Lady Paley,	87	Josephine,	71
Poppy,	82	Lucy,	80
Red Rose,	111	Twin,	52
Rose of Sharon,	97	Mate,	35
Evening Star,	120	Lady,	80
Virginia,	110	Dairy,	55
Scioto,	110	Venus,	53
Maria,	52	Beauty,	75
Thames,	120	Ten yearling heifers sold for the following prices:—	
Miss Marshall,	125	$36, 41, 31, 30, 32, 50, 36,	
Sandusky,	60	30, 31, 43.	
Dutchess,	81	Bulls.	
Paint,	73	Prince Charles, 3 years old,	105
Laura,	43	Albion, do.,	60
Lilly,	45	Farmer, 2 years old,	30
Flora,	125	Red Rover, 1 year old,	46
Daisy,	40	Five bull calves sold for $36, 54, 59, 54, 30.	
Blossom,	54		
Scippo,	90		
Blanch,	100		
Blink,	90		

These cattle were all bred from those imported by the Ohio company in 1834, '35, and '36, and were, it is said, of highly approved pedigree. A few years since, it was one the finest herds within our knowledge.

FOREIGN.

By the Caledonia arrived at Boston on the 18th, we have foreign papers to the 4th of August. The crops in Britain as well as on the continent, are generally good. The wheat in some districts of England had been cut. The quality is said to be fine, but the large quantities in market and constantly arriving from foreign ports, keep prices very much depressed. The rot in potatoes had shown itself in some parts of Ireland and also in Scotland, but the crop is spoken of as being in most cases promising. In France and Belgium, is said to be very fine. American beef was selling in considerable quantities, but at low rates. Pork was dull, and on the decline. Cheese had arrived from the United States in considerable quantities, but owing to the inferior quality of the article, was dull of sale. A large sale might, it is said, be counted on for prime qualities.

The annual exhibition of the Royal Agricultural Society took place at New-Castle-on-Tyne, in July. The number of exhibitors is stated to have been greater than at any previous meeting. The show of horses is spoken of as very superior. Short horned cattle were numerous and good, and the Herfords and Devons, though in less numbers, owing to the exhibition being remote from the breeding districts of those breeds, were of excellent quality. Leicester and South-Down sheep were numerous and sustained their reputation as to quality. The exhibition of pigs was very superior. The show of implements was very extensive, and the articles themselves generally evinced great improvement. Valuable lectures were delivered before the society by Professor JOHNSTON and others, which we shall notice more fully hereafter. Thirty thousand persons entered the show-yard in one day during the exhibition.

INQUIRIES.

DECAY OF HEMLOCK SLEEPERS.—H., (Middlebury, Vt.). You say the decay of your sleepers is "caused by a damp cellar and allowing the bark to remain thereon for years after the house was built." Our experience does not furnish a knowledge of any effectual remedy in such a case. We should think as thorough ventilation and drying as is consistent with all circumstances, would be most likely to check the decay of the timber.

CHEESE MAKING.—V. W., (Minisink, N. Y.) For making Cheshire cheese, see an article in this number. For Gloucester cheese, see Cultivator for 1844, p. 165, 166. For the mode practiced at some excellent daries in Connecticut, see last vol. p. 283, '84.

SOILING.—W. F. B., (Davidsonville, Md.) For the present we must refer you to our volume for 1846, p. 22, 23. We may take up the subject more fully at another time. You will, however, find Mr. Newhall's system as there given a good one.

HESSIAN FLY.—J. S., (Tyre, N. Y.) We will not say that this insect was brought here by Hessian troops in the time of our revolutionary war, but we have never heard of its having been discovered here previous to that time. Dr. HARRIS, also, states this. [*Insects injurious to Vegetation, p.* 422, 423.] He says it was first discovered on Staten Island, in 1776, in the neighborhood of Sir Wm. Howe's debarkation, and at Flat Bush on the west end of the island.

CANADA THISTLE.—J. S. There is a tradition that the seeds of this plant were brought from France, and sown in Canada by the first settlers, for the purpose of affording food by its roots, for hogs.

CONDENSED CORRESPONDENCE.

DEEP PLOWING.

A subscriber at New-Brunswick, N. J., relates several instances in which deep plowing did not prove beneficial. In the case first related, he undertook to raise a large crop of turneps on a small piece of ground. The soil, which was a sandy loam, very friable and clear of stones, he dug with a spade, twelve inches deep, mixing well with the soil a very large quantity of well-rotted manure from the horse and cow stable. The crop was well taken care of, but the produce was small compared with other crops of the same kind in the neighborhood. There was, however, an extraordinary growth of tops, they having reached the height of two feet.

He next tried a similar experiment with potatoes—plowed deep, put in plenty of rotten manure, and mixed it well with the soil. The same result followed as with the turneps, very large tops and small potatoes, and of a poorer quality than the seed planted.

These results are by no means singular—we have often known such, especially with the kind of soil he mentions. A large quantity of animal manure deposited in a raw soil, nearly destitute of organic matter, usually tends, so far as our own observation goes, to produce straw or haulm in a greater proportion than grain or tubers. But after a year or two, when the manure has become thoroughly decomposed and incorporated with the soil,—when the soil itself has really become rich to the depth it has been worked—this deficiency of grain and tubers and excess of straw and tops will not follow.

The same writer mentions some trials he had made with urine, which resulted unfavorably. He says it "scorched up" every thing to which it was applied, and that he finds it "acts so in pastures where horses run and have voided their urine." We presume that the

cause of the "scorching" is the same in both cases, that is, too much is applied in a place—bringing in contact with the plants a greater quantity of ammonical salts than they can digest. If he will first apply the urine to peat, charcoal dust, saw-dust, or any other absorbing substance, and then mix it with the soil, or use it as a thin top-dressing, he will find no cause of complaint.

.....

COCKROACHES KILLED BY CATS.

A correspondent at Hartford Connecticut, with the signature L. B., informs us that his cats devour cockroaches, and he thinks it probable that cats in general do the same, as he has never known those insects to be found in great numbers in houses where catswere kept.

His attention was first called to this matter from his cats having vomited cockroaches.

We doubt much whether the destructionof these disgusting insects is effected to any considerable extent by cats. That kittens, or young, *inexperienced* cats, sometimes eat cockroaches, we have noticed; and we have generally observed, that they produce the same effect exhibited by L. B.'s cats—that is, the insects made them sick, and they vomited up their unnatural meat. But we have seldom known old cats touch cockroaches; on the contrary, we have, in one instance, at least, been annoyed by the insects when several cats that were about the house totally disregarded them.

NEW PUBLICATIONS.

.....

INCENTIVES TO THE CULTIVATION OF THE SCIENCE OF GEOLOGY; by S. S. RANDALL, Deputy Superintendent of Common Schools for the State of New-York, Editor of the Common School Journal, &c. This is a work of 190 pages, designed chiefly as an incentive to the study of Geology, and is dedicated to the young of both sexes, of the State of New-York. From what we have examined, we think it most admirably calculated for its purpose. It is written in a clear and interesting style; technical terms, which are often so discouraging to beginners, being purposely avoided, and the vast subject to which it relates, is treated generally in a manner which cannot fail to be both attractive and instructive. Published by GREELY & MCELRATH, Tribune Buildings, New-York.

THE CULTIVATION OF AMERICAN GRAPE-VINES, AND MAKING OF WINE; by ALDEN SPOONER.—A neat and useful manual of about 100 pages, the author of which is understood to have had considerable practical experience in the culture of the vine, &c. It furnishes a brief history of the vine, a notice of foreign varieties in America, and a history of American vines, particularly the celebrated Isabella, Catawba and other fine varieties. It gives also plain directions for the culture and general management of the vine, for protection against insects, diseases, and for making various kinds of wine. Published by A. SPOONER & Co., 57 Fulton st., Brooklyn, N. Y.

MEDICO-CHIRURGICAL REVIEW.—We have before us the number of this excellent publication for July. This work is undoubtedly the ablest and most valuable periodical of its kind in the world. It is a quarterly, each number of which contains near 300 pages, closely printed original matter. The American edition is issued by R. & G. S. WOOD, 261 Pearl street, New-York, at $5 per annum in advance. We should suppose that the pleasure to be derived from its perusal, to say nothing of its undoubted utility, would be worth twice the price of subscription, to any practising physician, or to any other person interested in a knowledge of the human system, or animal physiology in general.

NEW-YORK FARMER AND MECHANIC.—This is a weekly publication devoted to the dissemination of intelligence relating to agriculture, the mechanic arts, &c. It is under the editorial management of W. H. STARR, JAMES M. BAKER and E. P. WHITMORE,—the first named gentleman being the publisher. Few papers in the country are calculated to be productive of more real good than this. It has been issued for nearly two years, and during that time has circulated a large amount of valuable matter. It has lately undergone several improvements in typographical appearance, and not only for its *good looks*, but for its sterling worth is highly deserving encouragement. $2 a year in advance.

REPORTS OF THE OFFICERS OF THE MAINE INSANE HOSPITAL.—We are indebted to Dr. JAMES BATES, the superintendent of this institution, for a copy of the report in reference to its concerns for the year 1845. We are pleased to learn that the hospital is managed in a manner productive of very gratifying results to its philanthropic founders and friends.

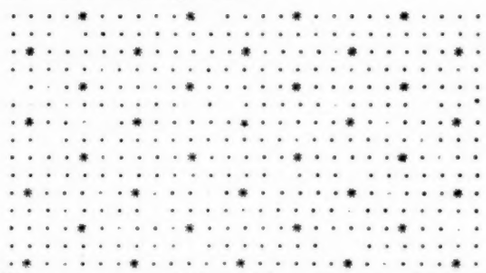
PLANTING STRAWBERRIES.

.....

Mr. EDITOR.—I am about forming a "strawberry patch," on a scale somewhat extensive; and, to avoid disappointment, I should like to be directed in your September number, as to the manner in which the pistillate and staminate vines should be planted, so as to yield fruit in the greatest abundance.

Respectfully yours, RURALIST.

To secure productiveness in pistillate varieties, in the highest degree, it is usually considered advisable to intermix about one-tenth of staminate plants. These may be differently disposed, according to the mode of cultivation. If the plants are placed in beds, at equal distances each way, as is usually practised in gardens, the staminate plants may be distributed as exhibited in the annexed figure, where the dots represent the bearing or pistillate plants, and the stars the staminate plants. According to this mode, there is one staminate plant to eleven bearing ones; and being distributed very nearly in the true hexagonal form, each staminate plant is nearer to a greater number of bearing ones, than by any other mode of arrangement.



Where they are cultivated in rows, on a large scale, to admit the working of a horse among them, every tenth row may be staminate.

It is not necessary that a *barren* staminate variety be used to impregnate the others. There are some fine sorts, which possess both stamens and pistils in abundance, which will not only fertilize themselves, but all others round them. Perhaps the best for this purpose is the large early Scarlet, a very early and productive variety, the fruit usually seven-eights of an inch in diameter, and of very fine flavor.

DOMESTIC ECONOMY.

.....

OYSTERS OF GREEN CORN.

A lady of whose skill in housewifery we have seen good evidence, has kindly furnished us the following directions for preparing a dish, which, she assures us, very much resembles fried oysters, in taste.

"Grate 12 ears of sweet corn; take one-half a pint of milk to rinse out the cobs; add six eggs, three tablespoonfuls of flour; and salt to the taste. Fry them on a buttered griddle, like pancakes. They should be fried slowly, and be thoroughly cooked."

.....

SUCCOTASH—[not "suckatash," brother BEECHER,] is a dish, which, as well as the name, according to NOAH WEBSTER, "was borrowed from the native In-

dians." What innovations on the primitive mode of preparing it have been made, in its transfer from savage to civilized society, we are unable to say. The *vegetable* material, (corn and beans,) of which the dish is composed, were no doubt first obtained of our red brethren; but for the *animal* portion, we substitute the flesh and fat of the hog, for that of the bear, 'coon, and 'possom, which they used. Mr. BEECHER, of the Indiana *Farmer and Gardener*, gives the following mode of making succotash; and from what we have heard of his correct *taste*, (in more than one thing,) we have no doubt the recipe is A, No. 1. The directions are said to be "for a mess sufficient for a family of six or seven."

To about half a pound of salt pork add three quarts of cold water, and set it to boil. Now cut off three quarts of green corn from the cobs, set the corn aside, and put the cobs to boil with the pork, as they will add much to the richness of the mixture. When the pork has boiled, say half an hour, remove the cobs and put in one quart of freshly-gathered, green, shelled, beans; boil again for fifteen minutes; then add the three quarts of corn, and let it boil another fifteen minutes. Now turn the whole out into a dish, add five or six large spoonfuls of butter, season it with pepper to your taste, and with salt also, if the salt of the pork has not proved sufficient. If the liquor has boiled away, it will be necessary to add a little more to it before taking it away from the fire, as this is an essential part of the affair.

TOMATO PICKLES.—Take Tomatoes two-thirds ripe, (when they begin to turn a little red,) prick them with a fork, put them in a strong brine, and let them remain eight days; then put them in weak vinegar to remain 24 hours; remove them from this, put them in stone jars; and to a peck of Tomatoes add a bottle of mustard, an ounce of cloves, and an ounce of black pepper ground, laying alternately a layer of tomatoes and spices. Then pour on strong vinegar cold and they will be found to be delicious. The brine should be prepared by boiling and putting in as much salt as will dissolve, then suffered to cool. For any kind of pickles it is best when prepared in this way.

ANOTHER.—Take the small round tomatoes, let them lay in weak vinegar two or three days; then prepare the best of vinegar by putting in cloves, allspice, pepper, cinnamon, and such spices as one may fancy, and then scalding it well. When entirely cold, put in the tomatoes, and if there is sufficient body to the vinegar, your pickles will never require any farther trouble, provided they are kept from the air. An ounce of alum to a gallon of vinegar is a great improvement to *cucumber* pickles, but the writer has never tried it for tomatoes.

GREEN TOMATO PICKLES, or *tomato soy*.—Slice green tomatoes, crosswise, put them in a stone jar, in layers, giving a liberal sprinkling of salt to each layer, till the jar is full. Let them stand over night; then squeeze all the water from them that can be done by pressing them with the hands. Then commence putting them in jars by laying the tomatoes two inches thick, and sprinkling on the layer of ground allspice, cloves, mustard-seed, pepper, horse-radish, stick cinnamon and onions, if they are liked. When the pot is full, pour on the best of cider vinegar, put on a slight weight, and cover it tight. The writer has used this recipe a number of years and never had occasion to pour off the vinegar and scald it, but this should be done if there is the least appearance of fermentation.

MR. EDITOR.—The following recipe for making an excellent syrup, I lately received from the lady of WM. BUEL, Esq., Rochester. A small quantity of this syrup, mixed with cold water, makes the most pleasant and grateful beverage for hot weather I ever tasted.

W. H. S.

"Cover the raspberries with good vinegar and let them stand for twenty-four hours; then strain the juice, (after having crushed the fruit,) and put one pound of white sugar to one pint of the strained juice; boil down and skim, and then bottle for use."

PRICES OF AGRICULTURAL PRODUCTS.

.....

New-York, Aug. 21, 1846.

COTTON—New Orleans and Alabama per lb., 7½*a*9½c.—Florida. 7¾*a*9¼—Upland, 7¼*a*9 cts.

BUTTER—Prime, per lb, 15*a*16c.—Common, 6*a*7.

CHEESE—Per lb., 6*a*7c.

FLOUR—Genesee, per bbl, $3.94*a*$4.00—Michigan, and Ohio, $3.81.

GRAIN—Wheat per bushel, 81*a*85 c.—Rye, 68 c.—Corn—Western, 51*a*52c—Barley, 48.—Oats. 29*a*30

HEMP—Russia, clean. per ton, $215*a*$225—American water-rotted. $131*a*$135.

HAMS—Smoked, per lb., 5½*a*7 cts.

BEEF—Mess, per bbl., $6.50*a*$7—Prime, $4.50*a*$5.

LARD—Per lb. 6*a*7c.

PORK—Mess Ohio, per bbl., $9.62*a*$9.75—prime, $8*a*8.12½.

WOOL—(Boston prices.) Aug. 18:

Prime or Saxon fleeces, washed per lb.....	32*a*34	cts.
American full blood fleeces,.....	27*a*28	"
" three-fourths blood fleeces,.....	22*a*28	"
" half blood do	20*a*22	"
" one-fourth blood and common,.....	18*a*20	"

FRUIT TREES.

THE subscribers would respectfully call the attention of the public to their assortment of FRUIT TREES. They are enabled this fall to offer a choice collection of many of the most esteemed varieties of Apples, Pears, Cherries, Peaches, Plums, &c., &c., &c. The assortment of trees having been considerably increased, persons desirous of obtaining articles in the nursery line, will find it worth while to examine the collection previous to purchasing elsewhere. All of which will be offered at very rea sonable prices for cash.

N. B. All articles intended for distant transportation will be carefully packed at the expense of the purchaser, and delivered free of cartage to any part of the city.

WILSON, THORBURN & TELLER.

☞ Orders sent to Wm. Thorburn, Seedsman and Florist, 49 Broadway, Albany, will receive prompt attention.

Sept.1—3t.

COMMERCIAL GARDEN AND NURSERY, OF PARSONS & Co., FLUSHING, NEAR N, Y.

THE proprietors of this establishment are constantly increasing their stock which now covers nearly seventy acres of ground, and includes every desirable variety of Fruit and Ornamental trees, Shrubs, Roses, Vines, &c Their possession of specimen grounds for the testing of every variety of fruit they cultivate, affords them increased facilities for the attainment of correctness. They would also call attention to their large assortment of Foreign Grapes, some seventy varieties of which they are fruiting under glass.

To venders and those who purchase in large quantities, liberal discounts will be made Catalogues can be obtained gratis of Parsons & Lawrence, 10 Pine st; of A. B. Allen, 187 Water st., or of the proprietors by mail.

Sept 1.—3t. [1]

BUFFALO NURSERY AND HORTICULTURAL GARDEN, BUFFALO, N. Y.

THIS old establishment now contains the largest stock of Fruit trees, Ornamental trees and Shrubbery, of size for sale, ever offered in western New-York, or in the western country. The stock of fine thrifty apple trees is now unusually large and fine. Trees from 6 to 8 feet high $18 per 100. Trees from 5 to 6 feet, (5 to 20 of a sort) $12 to $14 per 100. The assortment of choice and select Cherry trees is also very large, embracing a large number of the most valuable, and noted sorts. Trees 5 to 6 feet high, 37½ cts each; 6 to 8 feet, 50 cts—from $32 to $35 per 100

Also a very general assortment of the Pear, Peach, Plum, Quince, Apricot, Gooseberry, Currant, Raspberry, Strawberry, &c.

The assortment of Ornamental Trees and Shrubs, Herbaceous plants, &c., is now much larger than ever before, including a fine collection of Evergreen trees and Shrubs.

About 200 varieties of the Rose, many of them rare and truly fine. 16 varieties of the Pæonie, 60 varieties of splendid Dahlias, together with a large stock of choice green-house plants.

Extensive additions are constantly being made to this establishment, and no expense has or will be spared, to render it as perfect as that of any other in our country. Specimen or standard trees of each variety of fruit here propagated, may be found growing on his grounds; and all of the new sorts of fruits as they are brought out, are engrafted in the tops of bearing trees. Perhaps few establishments in our country can show as many specimen trees in fruit as may be found here. Nurserymen and others are respectfully invited to visit this establishment, and examine the fruits and the general arrangement of the nursery grounds.

Trees and plants packed in superior order, and forwarded with despatch. Descriptive Catalogues forwarded to all post paid applications.

All packages destined for the west will be forwarded by steam unless otherwise ordered. Orders by mail or otherwise will receive the most prompt attention. BENJ. HODGE

Buffalo, Sept. 1st, 1846 1t [1.]

GUANO,

BY the ton or hundred, or in smaller quantities, at 23 Dean-st.
E. COMSTOCK & Co., Albany Ag. Warehouse

NOTICE.

THE subscriber is happy to be enabled to give this notice to the public at this period, that the improvements added to the *genuine* "Warren Two Horse Power Machine," as promised in the last January number of the Cultivator, (see advertisement) and as again spoken of in the June number, have proved by fair experience to be all that was hoped or needed. The machine bears the warrant of giving entire satisfaction in all respects.

The subscriber is also successfully furnishing the "Trimble Two Horse Power Machine,"—price $60. J. PLANT,

Sept 1—1t. 5 Burling-Slip.

FOR SALE.

A FEW fine Paular Merino sheep for sale, bucks and ewes; say about 50 ewes from four to six years old, and 40 to 50 buck lambs, that are nice, and of a large size, and 6 or 8 bucks that are from one to four years old, all in fine order.

JOSEPH I. BAILEY.

Newport, Sept. 1, 1846.—3t.

MERINO SHEEP.

THE subscriber has for sale a fine lot of BUCK LAMBS from his flock of Paular sheep, which were selected by himself, with great care, from some of the best flocks in Vermont. These lambs were dropped early, and will therefore be able to do good service this fall. Should a few ewes be wanted with a buck, for the purpose of commencing a flock, they would be spared. A portion of the lambs were got by the buck *Major*, which after having taken one of the premiums at the State Fair at Utica, took the first premium at the Tompkins county Fair, in October last. He was shorn for the first time, on the 4th of June last, having carried his fleece two seasons, and after having been thoroughly washed, and allowed proper time to dry, he gave *fifteen* pounds of good, handsome wool. The whole flock, 85 in number, about 60 of which are ewes, averaged 5 lbs. of wool per head, well cleaned and in good order. Some of the ewes with lambs by their sides, gave over 6 lbs of wool each. The proportion of lambs reared for the two last seasons, is within two per cent. of the number dropped. REED BURRITT.

Burdett, Tompkins county, N. Y., Sept. 1—1t.

TO WOOL-GROWERS.

THE subscribers have a tract of land lying in Patrick Co., Va., consisting of about *ten thousand acres*, which they wish to sell or rent. It has on it immense quantities of the largest timber, with abundance of water, and water power. A portion of the land has been cleared, and produces the finest grass in the world. We would like to dispose of it, or to enter into partnership with any gentleman who would furnish a flock of sheep, and go into the business of growing wool. Apply by letter to either of the subscribers, at Cumberland Court House, Va., or in person to Col. A. Staples, Patrick Co., Va., who will show the land.

WILLIAM W. WILSON

Sept. 1—6t. WILLIS WILSON.

DURHAM BULL "CATO" FOR SALE.

THE subscriber who is now raising 20 head of his stock, having no further sufficient use for him, offers for sale his thorough bred improved Short-Horn bull "Cato."

He was four years old the 3d of May last,—vigorous, and very sure—extremely tractable, and of kind disposition,—of good size,—color milk white.

His sire was the celebrated imported bull "Fairfax,"—his dam, the full bred cow "Diana," renowned for extraordinary milking properties, both owned by E. P Prentice, Esq., of Mount Hope.

The frontispiece of the Jan. number of the "Cultivator" of 1843, is an engraving of his sire, of whom Cato is now almost an exact counterpart in beauty, symmetry, and color; and the same volume contains a full description of his pedigree, from the third volume of the British Herd Book, page 509. He received the first premium at the State Fair, when a calf of six months, over a large competition.

If not previously sold, he will be offered for sale at Auburn, at the annual Fair of the N. Y. State Agricultural Society, in September.

Letters concerning him may be addressed to the subscriber at Saratoga Springs, Saratoga Co., N. Y., where the bull can be seen. H. H. LAWRENCE

Sept. 1, 1846.—1t.

AUCTION.

THE undersigned, assignees of Gen. William Salisbury, will sell at public auction, on Tuesday, the 15th of Sept., next, at 10 o'clock A. M., at the public house kept by Mr. Smith, in the village of Madison, county of Greene, the real estate situate near Madison, late the property of the said Gen. Wm. Salisbury, containing about 900 acres, divided into farms and wood lots. A large portion of the Farms consisting of alluvial flats, on Catskill creek, of the richest description. The property will be sold in parcels to suit purchasers.

Terms—20 per cent. cash, on day of sale, and balance secured by bond and Mortgage, on execution of deed. Title indisputable.

☞ The property in Catskill belonging to the same estate, consisting of a lot with the Brewery on it, will be sold the next day, at 10 o'clock A. M., at the public house of Mr. Osborn, in Catskill. Terms made known on the day of sale.

JOHN VAN DEUSEN,
JOHN VAN VECHTEN,

August 8, 1846.—1t. *Assignees.*

AGRICULTURAL MACHINES.

THE subscriber offers for sale at low prices, wholesale and retail, a general assortment of approved Agricultural Machinery, &c., among which are the following, viz:

Ploughs, No. 10½, 11¼, 12½, and other kinds,—prices,	$1 50 to	$5
Cultivators,	4.00 to	6
Harrows,	6.00 to	9
Subsoil Plows,	5.00 to	6
Hay Cutting Boxes,	3.00 to	4
Hand Corn Shellers,	8.00 to	10
Corn and Cob Crushers,	26.00 to	36
Burr Stone Mills,	35.00 to	125
Horse Powers,	40 00 to	60
Threshers,	25.00 to	35
Hand Threshing Machines,	35.00	

Store Trucks, Straw Cutters, Fan Mills, Plow Castings, Gin Gear, Mill Spindles, &c., &c. J. PLANT.

Sept. 1—1t. 5 Burling-slip. N. Y.

LINNÆAN BOTANIC GARDEN AND NURSERY,

Late of William Prince, deceased, Flushing, L. I., near New-York.

THE new proprietors of this ancient and celebrated nursery, known as *Prince's*, and exclusively designated by the above title for nearly fifty years, offer for sale a more extensive variety of fruit and ornamental trees, shrubs, vines plants, &c., than can be found in any other nursery in the United States, and the *genuineness* of which may be depended upon; and they will unremittingly endeavor to merit the confidence and patronage of the public, by integrity and liberality in dealing, and moderation in charges.

Descriptive Catalogues, with directions for planting and culture furnished gratis to those desirous of purchasing, on application, *post-paid*. WINTER & Co., Proprietors.

Aug. 1, 1846...2t*

WIRE CLOTH SEIVE AND SCREEN MANUFACTORY.

THE subscriber has constantly on hand a large assortment of the above articles, which he offers at the lowest market prices. D. L. CLAWSON.

July, 1846—10 mos. 191 Water-st., New-York.

P S.—All kinds of wire work manufactured to order.

KENDALL'S CYLINDER CHURNS.

THE following in relation to the above churns, from a firm in Vermont, who purchase of us, will show in what estimation the cylinder churns are held.

"We wrote you a few days since, to forward three each of the two smallest size churns. Please send us immediately six each of three sizes. Churns are getting in good demand. Our people think there is quite a saving when they can fetch the butter in two minutes, instead of churning two hours with the old fashioned churn. The Kendall churn is getting to be all the go."

The above churns are always for sale at wholesale or relail, at the Albany Agricultural Warehouse, No. 10 Maiden Lane, and 23 Dean-st. E. COMSTOCK & Co.

Aug. 1, 1846.

DOWNING'S NEW WORK.

THE HORTICULTURIST,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

THIS work, the publication of which was commenced on the first of July, 1846, may be ordered of the Proprietor, LUTHER TUCKER, Cultivator Office, *Albany*, N. Y., or of JOSEPH BRECK & Co., Agricultural Warehouse, 51 North Market-street, *Boston*; M. H. NEWMAN & Co., Booksellers, 199 Broadway, *New-York*; and G. B. ZIEBER & Co. *Philadelphia*, by whom it is published in those cities.

☞ Agents can obtain the work of either of the above publishers, at 20 per cent. discount, where five or more copies are ordered.

THE HORTICULTURIST is edited by A. J. DOWNING, Esq., and published on the first of every month, each number containing 48 pages octavo, printed in the best style, and embellished with plates and numerous other engravings, in a style similar to those given in Mr. Downing's "Landscape Gardening," and "Cottage Residences." Price $3 per annum, payable in advance.

THE HORTICULTURIST is devoted,

1. *To* GARDENING *in a thoroughly practical as well as scientific sense.*
2. *To the* DESCRIPTION *and* CULTIVATION *of Fruit Trees.*
3. *To Gardening as an* ART OF TASTE, *embracing essays, hints and designs on Ornamental and Landscape Gardening.*
4. *To* RURAL ARCHITECTURE, *including Designs for Rural Cottages and Villas, Farm Houses, Gates, Lodges, Hot Houses, Vineries, &c., &c.*

In short, this periodical may be considered a continuation of the various works on Rural Subjects, by its Editor, which have already been so favorably received by the public. It is now his object to assist, as far as possible, in giving additional impulse to the progress of Horticulture and the tasteful in Rural Life; subjects which are now so largely occupying all those interested in country pursuits.

☞ Subscriptions received by the publishers, as named above, and by the Agents for "THE CULTIVATOR," throughout the Union

VALUABLE FARM AND COUNTRY SEAT FOR SALE.

THE subscriber offers for sale the Farm on which he now resides, situate in Southwick, Hampden county, Mass. The road from Hartford to Northampton, via Westfield, along which a mail coach passes daily, runs nearly through the centre of the Farm, which contains about 400 acres, nearly half of which is wood land, heavily timbered. It is bounded on one side by the Farmington canal, which renders the communication with New-Haven, an excellent wood market, easy and expeditious. The buildings are a mansion house, with a wing, the latter new, making a front of 70 feet. Also a house for a tenant; three large barns, nearly new, covered with pine and painted; a corn house, carriage house, sheds, &c. Great pains have been taken in selecting and cultivating choice fruit, and there is now on the Farm, in full bearing, a great abundance of the best varieties of apples, cherries, peaches, &c. A part of the land is of superior quality, and on almost every lot is living water.

Tariffville, a large manufacturing village, seven miles distant, affords a ready market for wood and every kind of produce, raised on a farm. This is one of the most valuable and desirable locations in the country, not only for farming purposes, but for the gentleman of leisure. A large portion of the purchase money, if desired, can remain for a term of years. I will sell the whole together, or in two parts. Letters of inquiry addressed to me, will receive prompt attention, or inquiry can be made of LUTHER TUCKER, Albany, or of R. SHURTLEFF, Springfield.

ROGER S. MOORE.

Southwick, March 1, 1846.—6t

VALUABLE FARM ON STATEN ISLAND FOR SALE.

THE well known farm of the late Samuel Akerly, M. D., situated on the South side of Staten Island, in the town of Southfield, Richmond county, in consequence of the decease of its late owner, is now for sale. It contains 125 acres, 25 of which are woodlandI; is in a high state of cultivation, and well stocked with a variety of fruit trees. The house has been recently enlarged—is ample and commodious; the barns are new, and the farm is in good fence. It has a wide front to the water on a bay which abounds with the best kind of salt water fish, also with clams and oysters, all easily procured fresh from their native element. The experience of a long course of years, for the main part of the dwelling house has stood for more than a century, has demonstrated that the situation is perfectly healthful.

The late owner, Dr. Akerly, died in July last; he had cultivated the farm for a number of years with great assiduity and care, keeping a daily and most minute register of the precise amount of labor and cultivation bestowed on each field, and noting many important observations which would be highly instructive and useful to the future owner. The purchaser may be furnished with a copy of this diary.

The site of this farm is extremely beautiful—the approach to it from the main road is a private road of about half a mile in length, running mostly through a piece of woodland, consisting of young timber of vigorous growth. After the visitor has travelled on this road about one-third of a mile, there opens upon him a prospect which takes in the low land, comprising the cultivated part of the farm—the placid and bright bay which separates Staten Island from Monmouth county, N. J.,—the highlands of Neversink, with the two lighthouses erected thereon—the lighthouses on and near Sandy Hook, together with the one at Prince's Bay, including the west end of Long Island. All the vessels employed in the commerce of New-York with foreign countries may be seen as they come in and depart, from the dwelling house and several other points on the farm.

The late owner, Dr. Akerly, who was born and educated in this city, after extensive examination and inquiry for a farm to which he might retire, on account of impaired health, selected this spot, to which he removed in the year 1839. Here he sought health and quiet retirement, and found them, until the day before his decease. He became exceedingly attached to the farm as a residence, and would have most reluctantly exchanged it for any other residence whatever. Such were its attractions that he never left it a single day, in winter or summer, but with regret.

For further particulars apply to HIRAM KETCHUM, Executor, No. 31 Wall st., or SAMUEL BOWNE, No. 83 John-street

July 1, 1846.—3t.

POTATOES.

TO those who desire choice varieties of potatoes for seed, a favorable opportunity is offered this fall, as we shall be prepared to furnish the following varieties during the season and until too cold for sending abroad, viz:

"Hall's Early June," decidedly the best early potato cultivated, being not only superior for the table, but good yielders and are fit for eating many days before any other kind. The "Carter Potato" for winter and spring, stands deservedly high, and produces better crops than the Pinkeye. The "Prolific Blue" is an abundant yielder, and where potatoes are grown for feeding stock are a valuable variety. All the above sorts will be carefully packed in barrels and shipped to order. E. COMSTOCK & Co.

Aug. 1. Albany Ag. Warehouse.

WOOL.

LIBERAL advances will be made by the subscriber upon wool consigned for sale, or shipment to England.

HAMILTON GAY,

July 1—3t 53 South-street, New-York.

PRINCE'S PREMIUM STRAWBERRIES.

William R. Prince & Co., Flushing.

HAVING devoted great attention to this Fruit, now offer the most estimable collection existing in America or Europe, embracing all the choicest varieties recommended by the London Horticultural Society, and the most estimable of other countries, including several splendid seedlings, originated by themselves and others. The sexuality of every variety has been investigated, and such plants and directions will be furnished as will insure abundant crops. There is no such thing as strawberries becoming barren when properly managed; they can be transplanted from August to November.

Primordian, the finest and most productive early crimson variety, large, profuse bearer, one of our seedlings, and now first offered, $3 per dozen.

Large Early Scarlet, $1 per 100.

Garnestone Scarlet, $1 for 25, and $2 per 100.

Crimson Pine, large, fine, and prolific, another of our new seedlings, $2 per doz., and $3 for 25

Crimson Cone, one of the most splendid, large, bright crimson high flavor, profuse bearer, unrivalled, $3 for 50, and $5 per 100

Prince Albert, (true sort,) Coul Late Scarlet, Iowa, and Willay, $1 per dozen, and $2 per 50.

Alice Maude, Deptford Pine, Corse's Seedling, Boston Pine, and Buist's Prize, $1 50 per dozen.

President and Clara Victoria, $3 for six.

Swainstone, Black Roseberry, and Victoria, $1 for 25, and $4 per 100.

British Queen, Myatt's Eliza, Myatt's Pine, Elton, and Old Pine, all fine flavor, but poor bearers, $1 for 25, and $2 to $3 per 100.

Hovey's Seedling, Bishop's Orange, Ross Phœnix or Keen's Seedling, and Roseberry, 50 cents for 25, and $1.50 per 100.

Dundee, Hudson's Bay, and Methven, $1 per 100.

Royal Scarlet, Old Scarlet, Melon, and Downton, moderate bearers, 50 cts. for 25, and $1 per 100.

Hudson, (of Cincinnati,) great bearer, $1 for 25, and 2.50 per 100.

Prolific, Large Flat, and Green Hautbois, $1 for 25, and $2 per 100.

White and Red Running Alpine Everbearing, $1 for 50, and White and Red Bush, do., $1 for 25.

Common English Red Wood, (erroneously called Stoddard's Washington Alpine,) $1 per 100.

English White wood, $1 per 100.

Very large quantities at a reduction. Orders not less than $5, (cash enclosed,) will meet prompt attention.

N. B.—All orders must be sent direct to us, and no plants are from us unless our printed bill and signature accompany them.

Flushing, Aug. 1, 1846—2t.

FRUIT TREES, ORNAMENTAL TREES, SHRUBS, PLANTS, &c.

THE subscribers have in progress arrangements for furnishing hereafter every description of Fruit and Ornamental Trees &c., which, when completed, will enable them to forward to their customers in all parts of the country, every variety of choice Fruit Trees, Forest, and Ornamental Trees, Shrubs, Plants &c., from the best nurseries in this country They solicit orders from their friends and all in want of the above articles. Our central location and acquaintance with most of the nurserymen will enable us to meet the wants of all. When our arrangements are fully made, further and more particular notice will be given. In the mean time we shall be happy to receive orders from those in want of trees for setting out the ensuing autumn. Strawberry plants from one to four dollars per hundred. E. COMSTOCK & Co.

Albany Ag. Warehouse, No. 10 Maiden Lane, and 23 Dean-st.

Aug. 1, 1846.

A FARM FOR SALE.

SITUATED in Florence, Erie Co O., containing 50 acres of good land, suitably proportioned in meadow, plow, pasture and woodland. On the premises are a good dwelling house and a small barn, a thrifty bearing apple orchard, with a variety of other fruit trees. Said farm is 3½ miles from Lake Erie, and is contiguous to good markets, churches, and schools. Any inquiry may be made by letter, post-paid, to H DEAN, No. 135 Bridge-st., Brooklyn, N. Y., or of KNEELAND TODD, on the premises. Price, $1,100.

August 1—2t*

MULTICOLE RYE.

THE subscribers will be prepared to fill orders for the Multicole Rye, to a small amount, for sowing this autumn. This Rye has thus far produced abundantly, and promises to be a valuable variety. It requires no more than three pecks of seed per acre, and is highly recommended to those who wish to sow for soiling, as it grows very rapidly, and may be cut early in the spring.

E. COMSTOCK & Co.,

August 1. Albany Ag. Warehouse.

DURHAM CATTLE FOR SALE.

THE subscriber being about to make new arrangements in his business, offers for sale his entire stock of thorough bred Durham Cattle, (25 in number,) of unquestioned pedigree, for which see American Herd Book. This herd has been selected and bred with great care, and with particular reference to their dairy properties. They have descended from the most celebrated herds in England, and are unquestionably one of the most valuable in this country. Any inquiries by mail promptly answered by the subscriber. PAOLI LATHROP

South Hadley Falls, Mass., Aug. 1, 1846.—2t.

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FRUIT TREES.

THE subscriber offers for sale, at the Kinderhook Nursery, an unusually fine assortment of Fruit Trees, comprising the choicest varieties of Apples, Pears, Plums, Cherries, Peaches, &c., now cultivated.

The trees are of good size, and exceedingly thrifty. The stock of Cherries, Peaches, and Apples, particularly, is very large, and of beautiful growth.

Also on hand, an excellent stock of Ornamental trees, comprising Eurepean Mountain Ash, European Linden, Evergreens, &c., Also, stocks and seedling trees.

Catalogues will be furnished gratis to all applicants. It is particularly requested that all orders be forwarded as early as possible, say by the 15th of October, so they may be executed as soon as the season will admit.

Trees packed in the very best manner, and delivered at the Kinderhook steamboat landing, or railroad depot, free of expense.

HENRY SNYDER.

Kinderhook, August 14, 1845—1t*

GUANO.—200 tons, the balance of the ship Shakspeare's cargo from Ichaboe, in tight casks, for sale in lots to suit purchasers, by E. K. COLLINS & Co., 56 South-st.

The many experiments made this season from this cargo, not only prove the great gain in using it, but that it is at least equal if not superior to any other guano.

Sept, 1, 1846.—tf

A FARM FOR SALE.

SITUATED about 3 miles from Hoosick Falls, on the road leading from said village to Troy. Said farm contains 107 acres, divided into grass and plow lands, and is watered by never failing springs and streams. The farm has lately been well fenced, and has necessary buildings. Further description is useless, as purchasers are requested to examine for themselves. For particulars enquire of J. Burrell, Esq., at Hoosick Falls, or the subscriber at Lansingburgh. ALEXANDER WALSH.

Lansingburgh, Sept. 1, 1846.—1t.

FINE WOOLED BUCKS.

THE subscriber has had left in his charge, several bucks which are a cross between the Saxon and Merino varieties. They are two years old, of good size and form, and their wool, both in quantity and quality, would be found satisfactory. Further information given on inquiry. SANFORD HOWARD.

Cultivator Office, Albany, Sept. 1, 1846.

NEW-ENGLAND AGRICULTURAL WAREHOUSE AND SEED STORE.

Nos. 51 and 52 North Market-Street, Boston.

FOR sale at this establishment, a general assortment of Agricultural and Garden Implements—Howard's Improved Patent Cast Iron Plows of all sizes. Martin's improved Eagle and other Plows; Double Mould Board, Side-Hill, Paring, and other plows, in great variety, and of the most approved patterns. Howard's Subsoil Plows, Cultivators of different descriptions; Willis' Seed Sower, (the best in use;) Geddes' and other Harrows of various patterns; Green's Straw-Cutters, Willis' Straw-Cutters, of various kinds and prices; Gault's Patent Churns, Grindstones or Friction Rollers; Cast Iron Field Rollers, (a very superior and substantial article;) Garden Rollers of cast-iron, different sizes; Iron Rakes of every size and variety; Garden Trowels, Syringes, in great variety; Pruning and Budding Knives; Pruning Scissors and Shears in great variety; Grass Hooks and Garden Shears; Garden and Field Hoes of every pattern; Scufflers every size; Pick Axes, Shovels, Spades, Dung and Garden Forks of every description; Hay Tools, including the very best Scythes manufactured in the country, (in all cases warranted;) Hall's and other Hay Rakes, Pitch-forks, Grain Cradles, Horse Rakes, Sickles, Austin's Rifles, Whet Stones, &c., &c.

Also a complete assortment of Chains, viz:—Fence Chains—Trace do—Ox do.—Dog do.—Tie-up do. Hale's Horse Power; Hale's Threshing Machine and Winnowing Mills, Garden Engines, &c.

Also Axes, Hatchets, Bill Hooks, Hammers; Axe, Hoe, and Rake Handles; Ox Yokes. Bull Rings; together with every other article important for Agricultural or Horticultural purposes.

Harris' Paint Mill, the best in use, is also for sale at this establishment.

SEEDS, TREES, AND PLANTS.

The subscribers are enabled to furnish seeds of the purest quality, of every variety of field, vegetable, and flower seed; embracing every variety desirable far cultivation.

Also, Fruit, Forest, and Ornamental Trees and Shrubs, of every description.

Also Hardy Herbaceous Plants; Roses, embracing 500 of the best varieties; Bulbous Roots in great variety. Green-House Plants, Grape Vines, &c.

☞ Orders promptly attended to. JOSEPH BRECK & Co.

Boston, Sept. 1—tf.

A GOOD FARM IN AUBURN FOR SALE.

THE subscriber offers for sale the farm on which he now resides, in the village of Auburn, Cayuga county, consisting of 152 acres of good grain and grazing land, well enclosed and watered, and upon which are one large, and three moderate sized DWELLING HOUSES, Carriage Houses, Barns, Sheds, and other necessary out-buildings, three Apple Orchards, a great variety of choice Fruit Trees and Shrubbery, four durable Springs, three wells, two hundred rods of full stone fence, and an inexhaustible QUARRY of a superior quality of grey and blue lime stone, suitable for cutting and dressing, eligible and convenient for a continued sale of that article, either rough or hewn, according to the demand, and from which most of the elegant stone buildings in Auburn were erected.

This farm extends from North-street to and across State-street, with a front of eighty-six rods on the former and one hundred and sixteen rods on both sides of the latter—upon either of which may be advantageously sold a great number of village lots, at the pleasure of the owner. About 22 acres, including the large house, barns, sheds, two orchards and garden, lie between North-street and the Auburn and Syracuse Railroad; 65 acres, including the stone quarry and one dwelling house, lie between said Railroad and State-street, and the remaining 65 acres, with two dwelling houses, lie west of State-street—all which is in a high state of cultivation, well fenced, conveniently allotted, and in good order. The whole farm, or either of the above parcels, will be sold cheap, and if desired, time will be given for the payment of a large proportion of the purchase money.

Inquire of Luther Tucker, of Albany, Hulbert & Hall, of Auburn, or the subscriber upon the premises. GEO. B. CHASE.

Auburn, Sept. 1, 1846—1t.

PATENT PREMIUM FAN-MILLS.

I. T. GRANT & Co., still continue to manufacture the celebrated Improved Patent Fan-Mills, at the old stand, Junction, Rens. Co., N. Y. These mills have taken the *first premium* at the following places:—New-York State Fair, at the Institute, New-York, the State Fair, at Pennsylvania, and the State Fair at Maryland. The subscribers have no hesitation in saying that these mills surpass anything of the kind ever offered in market. They are the only mill that has ever been produced that will chaff and screen wheat perfectly clean in one operation.

We also manufacture *Grain Cradles* of the very best quality, which have taken the first premium at the New-York State Fair. They are for sale at factory prices, at the following places:—

A. B. Allen's, 187 Water-st., New-York;
D. L. Clawson's, 191 " "
E. Comstock & Co.'s, Albany;
H. Warren's, Troy; and
Viall & Warren's, Mechanicsville, Saratoga Co., N. Y.

All orders thankfully received and punctually attended to. All goods delivered at Troy, N. Y., free of charge.

I. T. GRANT, & Co., Junction P. O., Rens. Co., N. Y

Feb. 1—tf [2]